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GRAIN ELEVATOR STORAGE AT THE INTERIOR TERMINAL MARKETS: CHICAGO

THE question of an adequate supply of grain storage capacity has assumed first class importance because of the tendency toward congestion at the terminals in the past two years. The reasons for congestion are alleged to have been (1) excessive carry-over from the previous year; (2) the movement of winter wheat into the terminals before the spring wheat crop is harvested; (3) the slow movement to mills and exporters; and (4) an increasingly rapid movement from farms since the introduction of the "combine" in the Great Plains region.[1] To give point to the above, the carry-over of wheat July 1, 1929, was 183 million bushels, and on July 1, 1930, 214 million bushels as compared with 83 million for the five-year period 1924–28. Wheat exports in 1930 are but little above the exports of the past two years during which exports have been abnormally low.[2] Due

[1] Mimeograph release of the Federal Farm Board, July, 1930, *Discussion of Congestion at Terminal Markets*, by E. G. Bell, Jr.

[2] Exports of wheat from the United States as a percentage of total wheat production:

1891–94	34.5	1910–14	20.0
1895–99	29.1	1915–19	24.1
1900–1904	24.3	1920–24	27.9
1905–9	18.1	1925–29	17.5

[Footnote continued on page 2]

largely to the use of the "combine" in the winter wheat area, the percentage of total car-lot receipts of wheat received at Kansas City in July has increased from 19.7 per cent in the crop year 1921–22 to 38.5 per cent in the crop year 1929–30.[3] This speeding up in the rate of marketing has put an unusual strain on the storage and marketing machinery of the terminal market.

Thus a question of policy with respect to the right amount and proper location of grain storage space is presented to the Federal Farm Board and others who are endeavoring to solve the grain-marketing problem. After considering the possibilities of increasing storage on the farm and at country loading stations, the Farm Board's memorandum thus summarizes the advantages of terminal storage:[4]

> The first advantage of terminal storage is that it makes for economy in handling. Cars of wheat can be moved from country points into terminal or mill elevators without intermediate unloading and loading. A second advantage is that it affords maximum facilities for mixing and conditioning grain. In the third place, there is the greatest possible chance to make efficient use of terminal facilities. Terminal markets draw from a wide variety of conditions and localities. In regions where the crop is small one year it might be large the next. Storage space at markets which draw from different areas can be utilized more completely than elevators at country points. Terminal storage also provides the cheapest construction per bushel. Finally, warehouse receipts from properly bonded terminal elevators provide the very best kind of collateral for loans.

While the Farm Board suggests the limited expansion of space at country shipping points, it counsels co-operatives "to acquire terminal facilities by purchase or lease rather than run the risk of

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[Continuation of footnote from page 1]

1920	37.5	1925	13.7
1921	32.6	1926	24.8
1922	23.6	1927	21.7
1923	16.5	1928	15.8
1924	29.5	1929	11.4

Data from *1930 Year Book of the Department of Agriculture* with estimate for 1929 from the Federal Farm Board.

[3] See article by Green and Henney on "Some Effects of Changes in Production and Harvesting Methods in the Southwest on Wheat Marketing" elsewhere in this issue.

[4] Federal Farm Board, Mimeograph, April 3, 1930.

constructing terminal elevators which would not be needed over a long period of years." The issue thus resolves itself into a question of what is the best long-run policy in view of the new forces which are at work in this and other grain-producing countries of the world.

In the hope that some new light may be thrown upon this problem, there is presented in the following discussion a somewhat detailed study of the historical development of grain storage space at the Chicago market, the relation of this to the growth in the grain trade, the changes in amount and location of space within the market, changes in type of construction and size of plant, and measures of the use of storage space, both at Chicago and other terminals.

Chicago is the focus of the principal railroad lines which tap the grain-producing areas; it lies midway between the producing and consuming sections of the country. Thus it is ideally located as a grain storage center. To these advantages must be added the accessibility of cheap water transportation to the East. Indeed the beginning of grain warehousing in Chicago is coincident with the shipment of grain down the lake.

> It was not until 1838 that Chicago . . . . exported its first invoice of wheat. This amounted to 78 bushels and was shipped in bags to Buffalo on the steamer "Great Western" by the firm of Walker and Co.[5]
>
> The next shipment was in 1839, consisting of 3,678 bushels by Newberry and Dole whose warehouse was on the north side, immediately east of where the Rush-street bridge now stands. The wheat was bought from farmers' wagons and hoisted to the upper story by Irish power, with rope and pully. The problem of loading on the brig was solved by fixing a spout in one of the upper doors and making it gradually narrow until it reached the deck where the wheat was discharged into boxes holding four bushels, weighed and transferred into the hold of the vessel.[6]

The usual methods of loading vessels in this early day was by means of carts having a capacity of from 15 to 25 bushels. These were hand-propelled over a staging from which the grain was dumped into the hold. The largest vessels then had a capacity of

[5] Andreas, *History of Chicago*, I, 555.

[6] Quoted by Andreas, *op. cit.*, from the historical papers of Governor Bross, published in 1868. The Newberry and Dole warehouse is the first of which there is any record in Chicago.

10,000 bushels and to load one of these craft was considered a good day's work. By way of contrast it may be noted that the grain-loading record of today is held by the steamer "West Mount" which in 1921 loaded 355,000 bushels from the Saskatchewan elevator at Port Arthur in five hours.[7]

It was not until 1843 that Joseph Dart, a Buffalo grain forwarder, invented and applied the essential principle of a grain elevator, namely an endless belt with buckets attached which could be worked by power inside a movable "leg."[8] Dart's elevator was run by horse power, and it remained for Captain R. C. Bristol of Chicago to erect the first steam elevator in 1848 at Market Street and the river between Randolph and Lake streets.[9] In the same year, young Cyrus McCormick was busy equipping a small plant in Chicago for beginning mass production on his newly invented reaper.

The early elevators, as can be seen by reference to the map for 1848 (Fig. 1), were built along the south bank of the Chicago River on South Water and Market streets. The water receipt and shipment of grain entirely controlled these locations. The shipments of grain by lake in 1848 were 2,775,740 bushels.[10] The total grain storage space was somewhat over 420,000 bushels.[11]

[7] *Transportation on the Great Lakes,* War Department, 1926, p. 34.

[8] J. N. Larned, *History of Buffalo,* I, 216. Quoted in *Federal Trade Commission Report on the Grain Trade,* II, 184.

[9] Wood, *Chicago and Its Distinguished Citizens.* Also Andreas, *op. cit.,* I, 580.

[10] *Annual Report* of the Board of Trade of Chicago, 1915.

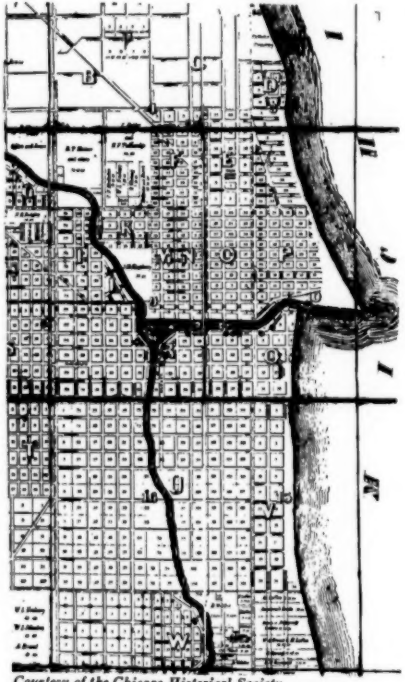
[11] Grain elevators in Chicago, 1848:*

Name of Elevator	Location	Capacity in Bushels
R. C. Bristol and Company	Market Street between Randolph and Lake	100,000
Orrington Lunt's	Lake and South Water streets	60,000
Neeley and Lawrence's	South Water Street west of Wells Street	50,000
George A. Gibbs	South Water Street east of State Street	40,000
Charles Walker's	South Water Street between Clark and Dearborn	55,000
James Peck's	South Water Street between Clark and Dearborn	40,000
Total		345,000

* Wood, *Chicago and Its Distinguished Citizens,* (1881) p. 383. Wood notes that Bristol had a second warehouse near the first of 75,000 bushels capacity.

In addition to the foregoing list, Andreas (*op. cit.,* I, 579) quotes the *Chicago Daily American* of March 18, 1842, as mentioning the warehouses of H. Norton and Co. on the Reservation "just above Clark Street bridge," J. D. Merritt on South Water Street, and Smith and Webster on South Water near Dearborn.

Locations on Fig. 1 in addition to those indicated above are taken from the Chicago *Directory* for 1848.



Courtesy of the Chicago Historical Society

FIG. 1.—Location of grain elevators, 1848

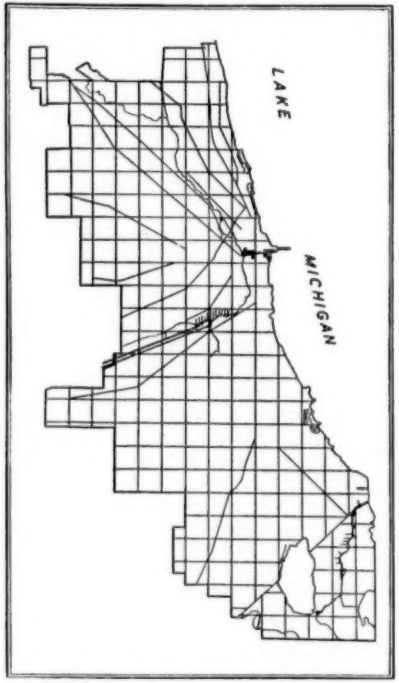


FIG. 2.—Location of grain elevators, 1857

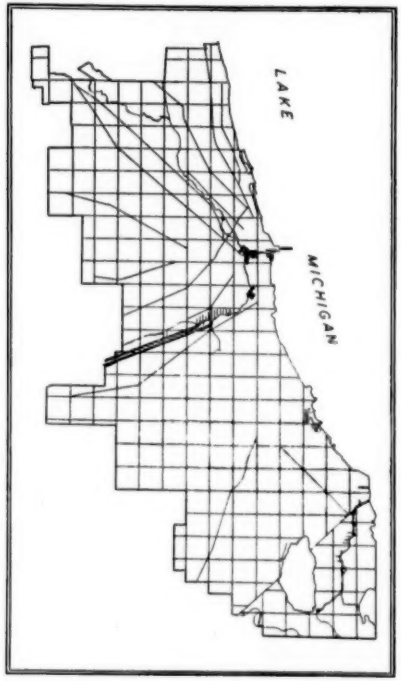


FIG. 3.—Location of grain elevators, 1863

The radius of the Chicago grain supply area from 1834 to 1848 was about fifty miles.[12] This was a pioneer period when the land was being opened to settlement and farmers were compelled to haul their grain to Chicago in wagons over dirt roads. By 1850 dirt roads had been succeeded by plank roads on the main highways into the city. This improvement had an immediate effect on the amount of grain hauled to the market. Then came the railroads. Grain receipts at Chicago jumped from 6,928,459 bushels in 1853 to 15,011,548 bushels in 1854, to 19,284,723 in 1855, and to 23,050,309 in 1856. Grain was arriving by the Illinois-Michigan Canal, opened in 1848, and over the Chicago and Galena Union railroad which was completed to Elgin in 1850. The period 1850 to 1857 was one of rapid railroad extension.

The Rock Island was completed to Rock Island in 1854, while the Burlington reached the Mississippi River in 1856. In 1856 also, the Illinois Central was built to Centralia, Illinois. The Michigan Central had been built in from the East in 1852. Thus the rich prairie country to the south and west had been tapped and the radius of the market greatly extended. All available grain storage space was filled. An embargo on grain loadings was declared by the Chicago and Galena Union in 1854. The *Democratic Press* of September 13 reports: "The piles of grain lying uncovered in our streets, the choked and crowded throughfares, the overloaded teams, the bursting bags . . . . testify to a widefelt want of room. . . . . We want more warehouses . . . . we want more banks and more capital."[13]

New and larger elevators were constructed but late in 1856 Taylor reports "the storehouses were all overflowing and it was almost impossible to unload canal boats and cars with dispatch, and in many cases to unload them at all."[14] The new houses were constructed for the most part on the north bank of the Chicago River adjacent to the terminus of the Chicago and Galena Union railroad (see Fig. 2). The Rock Island terminus controlled the location of the Flint-Wheeler elevator built in 1853 on South

[12] Andreas, *op. cit.*, I, 577.

[13] Taylor, *History of the Board of Trade of the City of Chicago*, p. 190.

[14] *Ibid.*, pp. 201–2.

Clark Street near Twelfth. Two large houses were built in 1855 and in 1857 respectively near the mouth of the river at the Illinois Central terminus. Thus a new factor, that of rail transportation, had by 1857 begun to play a part in elevator location. The total elevator capacity of the market in 1857 was 4,545,000 bushels.[15] Where the largest house in 1848 had a capacity of but 100,000 bushels, there were now three houses with a capacity of 700,000 bushels each.

By 1863, grain receipts had increased to 51,252,000 bushels, while elevator space was double that of 1857. Most of the grain elevators were still thickly concentrated on both banks of the Chicago River between the mouth of the river and the turning basin where the river forks (see Fig. 3). A new development was the increase in space on the south branch of the river. On the west bank at Sixteenth Street three new houses were built on the line of the Burlington. On the east bank at Seventeenth Street two additional houses were constructed on the line of the Rock Island. This marks the beginning of a trend which was to carry grain storage toward the south in the Chicago terminal.

The Chicago Board of Trade was organized in 1848, incorporated under the general laws of Illinois in 1850, and incorporated finally under a special act of legislature in 1859. The significance of the grain elevator for speculative trading on the Board is noticed by Andreas.

> An elevator had thus come to mean in 1857, a store-house for grain as well as a shipping facility. The houses were partitioned into huge bins for storage, either in special lots to be delivered in kind, or in general bins to be delivered according to grade. The issuing of receipts from these warehouses, with the grade of the wheat attached, began in 1857, and thus placed wheat in the list of articles which could be called purely speculative. The era of speculation in wheat dates from the issue of the first general warehouse receipt, in which the grade of the wheat was specified, and in which it was promised that a like grade would be delivered on demand.[16]

How rapid the progress of elevator construction was in this day can be seen from the data of Table I. "By 1870," says J. S. Wright in his history of Chicago published in 1870, "all elevators in use prior to 1855 had gone out of use."[17] Constantly larger and

[15] Andreas, *op. cit.*, I, 581. [16] *Ibid.*, I, 581. [17] *Ibid.*, I, 580.

better built structures were needed for the larger volumes of grain.

In 1871, the year of the Chicago fire, Andreas reports[18] twenty-one grain elevators in Chicago with total capacity of 11,375,000 bushels. Of this number six, with capacity of 2,475,000 bushels, were destroyed, together with 1,559,395 bushels of grain.

TABLE I

NUMBER OF ELEVATORS, TOTAL STORAGE SPACE, AND GRAIN RECEIPTS AT CHICAGO, 1848–1930*

Year	Number of Elevators	Total Space	Grain Receipts
1848	10	420,000	†2,775,740
1857	13	4,545,000	19,887,000
1863	19	8,845,000	51,252,000
1871	21	11,375,000	77,163,000
1875	17	15,250,000	69,270,000
1890	38	32,810,000	199,441,252
1893	26	42,800,000	225,953,000
1900	91	64,100,000	307,726,000
1910	72	50,845,000	258,831,000
1920	62	55,020,000	207,037,000
1921	59	48,170,000	323,389,000
1922	58	50,000,000	353,774,000
1923	56	54,235,000	248,315,000
1924	56	55,135,000	272,500,000
1925	55	50,735,000	181,076,000
1926	54	55,030,000	189,261,000
1927	63	53,145,000	192,278,000
1928	64	53,253,000	229,987,000
1929	57	53,253,000	170,567,000
1930	52	51,664,000	.....

* Data from Annual Reports of the Chicago Board of Trade. For years prior to 1900, the data of elevator space have been supplemented by information obtained from the Chicago city directories. For the years 1900, 1926, and 1927, additional data were received from the weighmaster of the Board of Trade. For the year 1892 the number of elevators includes only public houses, while the space includes both public and private elevators.

† Shipments, no receipts data available.

The pull of elevator location toward the south branch of the Chicago River was partly due to the importance of the Illinois-Michigan canal which in 1867 was accounting for 21 per cent of the total grain receipts at Chicago. The importance of the canal speedily declined, however; by 1875, only 6 per cent of total receipts were arriving by that route; by 1900 this had dropped to 1 per cent. The elevator locations in 1875 (see Fig. 4) still show

[18] *Ibid.*, II, 448.

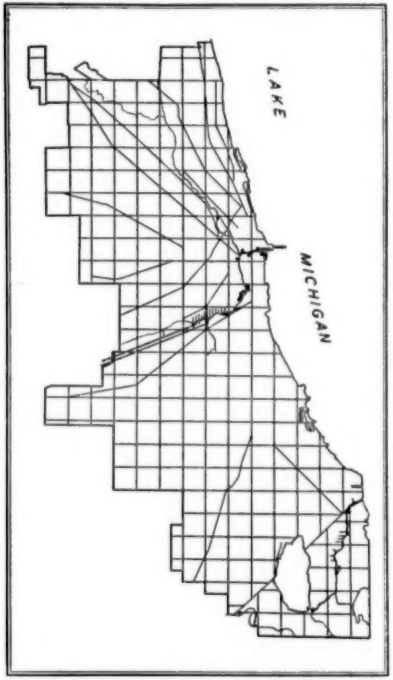


FIG. 4.—Location of grain elevators, 1875

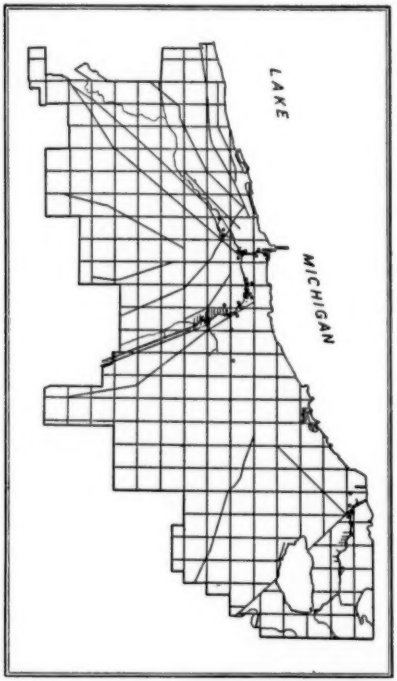


FIG. 5.—Location of grain elevators, 1890

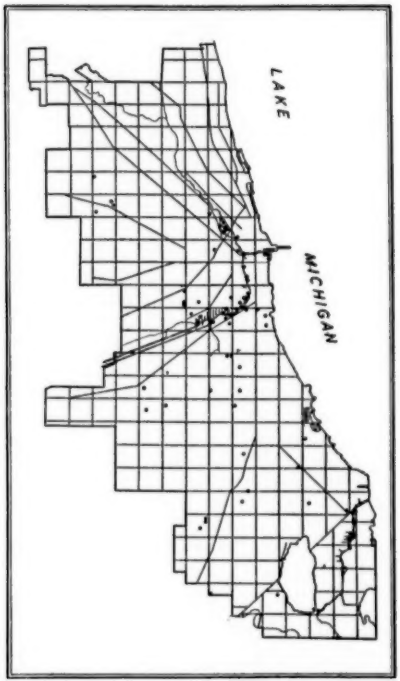


FIG. 6.—Location of grain elevators, 1900

the center of gravity near the entrance to the Chicago River but the building toward the south is significant both in number of houses and amount of space. A beginning of the movement along the north branch of the river is apparent at this time. Elevator space in 1875 was approximately double the amount available in 1863 (see Table I).

By 1890 space had again more than doubled with a total amount in excess of 32,000,000 bushels. Grain receipts had increased from 69,270,000 bushels in 1875 to 199,441,252 bushels in 1890. The trend of elevator location in this period was definitely along the south branch of the river with some further extension up the north branch to Goose Island. For the first time elevator properties appear in South Chicago in what is to become later the center of grain storage (see Fig. 5).

The year 1900 was not only the turning point of the century but it marked as well the high point in elevator capacity at the Chicago market. Total grain receipts in that year reached the unprecedented figure of 307,726,000 bushels, while elevator space was 42,800,000 bushels, the space again having doubled in the decade since 1890. Only during the war years and in 1921 and 1922 have receipts of grain at Chicago been larger than in 1900. The amount of elevator space has declined irregularly from that date.

At this time the concentration along the south branch of the river had reached a maximum. The development along the north branch and on Goose Island had assumed important proportions. A considerable amount of space had made its appearance at South Chicago and along the Calumet River. A wider scatter of smaller houses along belt-line railroads and in adjustment to feed and flouring mills is a new development. The old locations close to the mouth of the Chicago River have been largely abandoned (see Fig. 6).

By 1920 the concentration on the south branch of the Chicago River had definitely been broken and leadership had passed to South Chicago and the Calumet region. At this date 60.9 per cent of total space was south of Sixty-third Street, 39.1 per cent north of Sixty-third Street. By 1930 the percentages were 70.8 and

29.2, respectively. The shift of elevator space to the southern end of the terminal district is further evidenced by the fact that from 1900 to 1930 in the district north of Sixty-third Street, losses in space exceeded gains every five years during the period. South of Sixty-third Street, however, gains exceeded losses in every five

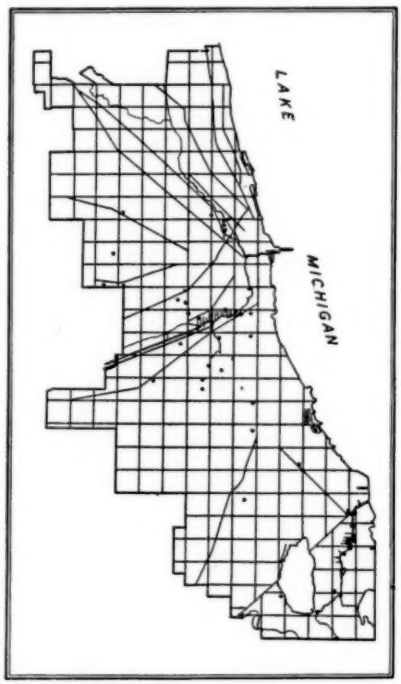


FIG. 7.—Location of grain elevators, 1930

year period. The relative positions of the two districts were reversed. In 1900 the north side had total capacity of 45,885,000 bushels, the south side 18,215,000 bushels. In 1930 the north side had been reduced to 16,015,000 bushels, while the south side had advanced to 38,915,000 bushels.[19]

An analysis of the losses north and south of Sixty-third Street

[19] Data from weighmaster of the Board of Trade.

over this period shows that the most important cause of loss on the north side was due to voluntary wreckage of the properties. This would indicate that original construction was of a temporary character or that the locations had become uneconomic. On the south side the principal cause of loss was by fire (see Table II).

Further evidence of the extent to which the handling of grain has shifted from one part of the area to another is apparent in the data of grain movement through the elevators. Data of grain received and shipped by rail and by water north and south of Sixty-third Street have been made available by the weighmaster of the

TABLE II

ELEVATOR LOSSES IN CHICAGO 1900–30

(Bushels, 000 Omitted)

DATE	NORTH OF SIXTY-THIRD STREET				SOUTH OF SIXTY-THIRD STREET			
	Torn Down	Burned	Retired from Use	Total	Torn Down	Burned	Retired from Use	Total
1900–1905	6,005	2,655	.....	8,660	.....	1,175	300	1,475
1906–1910	5,850	6,020	500	12,370	.....	905	90	995
1911–1915	5,300	775	125	6,185	.....	440	125	565
1916–1920	.....	1,540	1,364	2,904	400	575	.....	975
1921–1926	.....	4,215	470	4,685	.....	6,000	305	6,305
1926–1930	1,250	500	.....	1,750	.....	800	.....	800

Board of Trade[20] for the period from 1917 to 1925 inclusive. The data show that north of Sixty-third Street the annual average handlings by rail through the elevator properties was 81,361 cars, while south of Sixty-third Street the annual average of cars received and shipped was 156,182. The evidence of a shift in the handling of grain by water is even more convincing of the preference for location of elevator properties in the Calumet district. The annual average into- and out-of-storage movement by water north of Sixty-third Street over the period 1917–25 was 18,646,787 bushels, while south of Sixty-third Street the annual average water movement was 44,021,939 bushels.

Various causes may be alleged to explain this shifting location of elevator properties within the Chicago terminal district. The

[20] Mr. Joseph Schmitz, without whose assistance this article could not have been written.

most fundamental explanation is the variable importance of water versus rail transportation of grain out of Chicago on its way east. From 1840 to 1860 shipments were almost exclusively by lake. In 1860 grain shipped by lake was 93 per cent of the total movement out of the market.[21] During this period it is apparent that elevator properties were adjusted almost exclusively to water transportation and to the terminals of inbound carriers. The percentage of grain moving by lake was reduced to 62 per cent in 1867, and because of rate cutting by the eastern roads, the percentage was further reduced to 53 per cent in 1876. With an increase in rates the following year the percentage rose to 71.75.[22]

The period 1875–80 was one of severe competition between lake and rail carriers, and it was not until the passage of the Inter-Commerce Commission Act in 1887 that order was restored. The percentage of grain moving by lake remained fairly stable until 1900 when the railroads took over the ownership of the lake boats carrying grain to the east. This destroyed competition and the percentage of grain moving by lake immediately fell off to the low point of 21.56 for the five year period 1912–16. In 1915, however, the Interstate Commerce Commission stepped in to dissolve this relationship and the movement by lake assumed a more normal status.

Under the pressure of railroad competition, both the size and speed of lake carriers had become greatly modified. "The size of vessels which averaged about 700 tons in 1890 increased to an average of 1,200 tons in 1898. The maximum size of steamers reached as high as 7,000 tons."[23] By 1915, when water competition was restored, the average size of all steam vessels was 1,534 tons, with a maximum carrying capacity of 11,000 long tons.[24] The shift of elevator space from the Chicago to the Calumet River is coincident with this change in size of the bulk freighter. That the shift was accelerated by this same cause is evidenced by the fact that in 1925 the average size of bulk freighter had increased to 4,835 tons, the average length to 500 feet, and the

[21] *Federal Trade Commission Report on the Grain Trade*, II, 62–63.

[22] *Ibid.*, p. 65.

[23] "Transportation on the Great Lakes," *ibid.*, p. 29.

[24] *Ibid.*, p. 38.

carrying capacity to 14,000 long tons. It was no longer practicable to maneuver ships of this size into the Chicago River and the smaller boats could not compete. In 1925 but 70 package freight steamers of 1,000 gross tons and upward remained on the Great Lakes.

Other factors of course were at work. The growth of manufacturing and wholesale trade within the inner switching district created a congestion of railroad traffic which was not present when the elevators were originally located. It became more and more difficult to switch cars in and out of elevators without costly delay. No room was left for expansion of trackage facilities. Meanwhile the number of bridges over both branches of the Chicago River had greatly increased, and the flow of the river had been reversed, making a swift current. Navigation had become difficult even for the smaller lake carriers. It thus became advisable to seek new locations where access was easier, where land was cheaper and there was room for trackage.

The South Chicago and Calumet River districts in addition to offering easier access from the lake have a superior switching service from the belt railways. Congestion in the inner district is greatly relieved and the grain is handled with greater speed. Ample room is afforded for track storage. Improvements in telephonic communication and in the inspection and grading of grain should not be overlooked as factors making possible the location of grain storage at a distance from the trading center.

The shift in the storage of grain in the Chicago terminal is in part accounted for by the difference in cost of insurance on grain in houses of modern construction as compared with cost of insurance in the older type elevators. The early elevators were entirely of frame construction. About 1901, steel tanks and tile construction began to appear. Concrete came into use between 1903 and 1910. A canvass of types of construction of existing houses by dates of construction shows as in Table III. The older houses are, for the most part, on the Chicago River. The average insurance rate on grain per $100 of value in seven typical properties on the Chicago River built between 1872 and 1907 is $1.737. For fourteen typical properties in the Calumet district built between

1893 and 1917 the average insurance rate is $1.102 per $100 of value. This difference in cost has had some influence on the location of grain storage.

Throughout the period of construction there has been a trend toward a larger unit. This is traceable not only to the lower unit handling costs obtainable with a larger unit, but to the fact that new building materials such as steel and concrete have made it possible to build more strongly. Since 1848 the maximum size of grain elevator at Chicago has increased just one hundred times.[25]

TABLE III

TYPE OF ELEVATOR CONSTRUCTION*

Date	Wood Construction	Wood and Concrete; Wood and Brick	Concrete; Concrete and Steel; Tile; Brick and Tile
1890.....	All wood	.....	.....
1900.....	All wood	.....	.....
1910.....	53	6	12
1920.....	28	7	28
1926.....	20	30	21
1930.....	22	23	26

* Includes small elevators not listed in Board of Trade Report.

The age of grain elevator space now in existence is indicated in Fig. 8. Of the total now in existence, 36.19 per cent was constructed between 1872 and 1899, while 63.81 per cent has been constructed since 1900.

Chicago is exceeded in commercial grain elevator capacity by both Minneapolis and Duluth. If private industry houses and mill elevators are included, only Minneapolis has more space than Chicago. Duluth, Minneapolis, and Kansas City have been gaining rapidly in amount of space since 1921 while Chicago has just about held her own. The gain in space at Buffalo has also been significant. Gains at these markets have been most marked since 1928 (Table IV).

[25] Maximum size in bushels of elevators at different dates:

1848	100,000	1900	3,000,000
1857	700,000	1910	3,000,000
1863	1,000,000	1920	6,000,000
1875	1,750,000	1930	10,000,000
1890	2,000,000		

In terms of a ten-year average of grain receipts at fourteen interior markets, Chicago easily ranks first in importance with

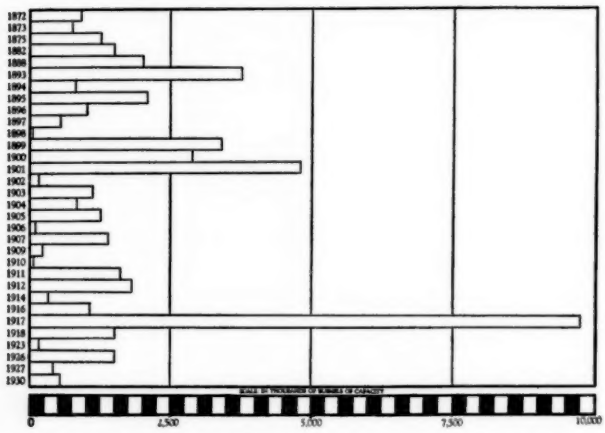


FIG. 8.—Age of existing elevator space in 1930 by building periods

TABLE IV

COMMERCIAL GRAIN ELEVATOR CAPACITY AT INTERIOR TERMINAL MARKETS,* 1921–29

(In Bushels, 000 Omitted)

Year	Chicago	Duluth	Kansas City	Minneapolis	Omaha	St. Louis
1921	43,045	36,000	21,575	42,310	10,540	4,920
1922	47,095	36,000	23,325	42,815	10,140	5,100
1923	49,930	38,200	23,325	41,870	9,995	5,300
1924	49,560	38,200	23,550	42,470	9,920	5,925
1925	47,560	38,200	25,550	43,042	10,915	5,515
1926	49,960	40,045	31,340	44,446	10,115	6,013
1927	46,663	40,345	31,890	44,979	11,214	6,690
1928	46,988	43,242	32,040	44,857	14,077	6,090
1929	44,863	46,194	32,920	57,353	14,133	6,970
Average	47,296	39,603	27,279	44,905	11,228	5,836

* Data from annual reports of the several markets with mill and industry elevators omitted. For St. Louis for 1927 the space shown in the report of the Minneapolis Chamber of Commerce is used, while for 1928 for St. Louis the space as reported in the *Northwestern Miller*.

23.06 per cent of total grain received at these markets over the period (Table V). The trend of Chicago's receipts of all grains is down over the period from 23.40 per cent in 1920 to 17.26 per

cent in 1929. Only in the case of rye is the trend of receipts up. Minneapolis, ranking second to Chicago in importance, also shows a declining trend in its percentage share of the receipts at these markets. Other markets which show a decline are Milwaukee, Peoria, Detroit, Sioux City, and St. Louis. Gains are registered by Duluth, Kansas City, Toledo, St. Joseph, and Wichita.

TABLE V*

PERCENTAGE OF COMBINED GRAIN RECEIPTS AT FOURTEEN PRIMARY MARKETS RECEIVED AT EACH MARKET, 1920–29

	Chicago	Minneapolis	Duluth	Kansas City	St. Louis	Omaha	Milwaukee	Peoria	Indianapolis	Wichita	St. Joseph	Toledo	Sioux City	Detroit
1920.....	23.40	18.85	7.82	10.45	10.70	7.03	6.36	4.36	4.82	2.43	1.78	1.46	.....	0.56
1921.....	29.00	16.47	9.78	12.10	9.54	5.86	6.32	2.84	3.46	2.51	2.12	1.53	.....	.48
1922.....	29.55	15.98	9.68	9.25	8.65	6.39	5.19	3.93	2.94	2.08	2.24	1.54	2.11	.49
1923.....	24.06	18.44	7.78	9.91	10.40	6.58	5.74	3.83	3.54	2.50	2.20	2.25	2.25	.55
1924.....	22.73	16.80	15.31	10.23	9.38	6.37	4.66	2.62	2.92	2.59	2.32	2.10	1.53	.38
1925.....	19.87	21.65	14.14	9.28	7.95	5.84	4.62	3.99	3.56	2.21	2.65	2.42	1.38	.46
1926.....	22.53	17.60	9.23	13.07	8.13	6.10	4.61	4.46	3.67	3.63	2.79	2.38	1.20	.62
1927.....	19.73	17.28	16.76	12.12	5.99	7.13	4.37	3.90	3.46	2.40	2.15	2.94	1.29	.48
1928.....	20.44	17.45	14.24	13.10	7.07	6.92	4.06	3.74	3.87	3.04	2.11	1.73	1.87	.37
1929.....	17.26	16.91	11.08	13.70	10.21	7.28	4.76	3.99	4.16	3.77	2.80	2.12	1.60	0.36
Average.	23.06	17.63	11.45	11.26	8.82	6.54	5.07	3.72	3.60	2.70	2.31	2.02	1.35	0.47

* Data for tables V and VI are from the Annual Reports of the Board of Trade of Chicago.

TABLE VI

PERCENTAGE OF AVERAGE GRAIN RECEIPTS AT FOURTEEN PRIMARY MARKETS RECEIVED AT EACH MARKET BY GRAINS, 1920–29

	Chicago	Minneapolis	Duluth	St. Louis	Milwaukee	Kansas City	Omaha	Peoria	Toledo	Detroit	Indianapolis	St. Joseph	Sioux City	Wichita
Wheat.....	9.76	25.47	16.49	7.92	1.28	18.98	6.76	.51	2.57	.38	1.09	2.69	.46	5.64
Corn.....	39.82	4.29	1.16	10.08	5.67	7.69	7.95	8.12	.95	.30	7.10	3.56	2.65	.66
Oats.....	32.14	14.68	4.01	12.45	8.79	3.78	5.94	5.59	3.00	.85	5.84	.74	2.01	.20
Barley.....	18.07	31.79	21.00	2.07	18.27	2.60	2.06	2.71	.14	.20	.03	.19	.45	.42
Rye.....	14.22	19.11	51.80	.97	5.06	1.01	3.76	.55	1.32	1.20	.68	.08	.18	.06

Duluth, which ranked fifth in importance in 1920, ranks fourth in 1929; Kansas City has advanced from fourth to third place, while St. Louis has dropped from third to fifth place. The relative importance of the different markets for the different grains is indicated in Table VI.

There is a direct relation between the amount and growth of storage space at these interior markets and the amount and growth of grain receipts (see Table I). A more direct measure of the use of terminal grain storage space, however, is obtained by relating the stocks of grain in storage at the markets to the avail-

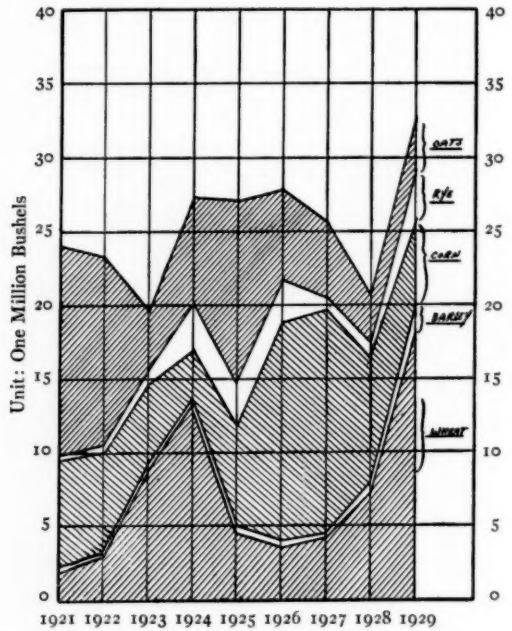


FIG. 9.—Annual variation in average weekly grain stocks at Chicago, 1921–29.

able commercial grain storage space. That there is constant variability of these stocks is apparent from Fig. 9 which shows the annual variation for the different grains in store at Chicago over the period 1921–29. Wheat tends to crowd out the other grains when it is available for storage because it is less subject to spoilage, makes more efficient use of space, and yields larger mixing profits. Corn and oats are used to fill space left idle by a shortage of wheat.

But stocks of grain in storage also vary widely at different seasons of the year. In an attempt to get a measure of the use of grain elevator space at representative terminal markets, ratios of stocks of grain in store at the seasonal high point, the seasonal low point, and the average of the weekly stocks reported for each market were obtained for the period 1921–29.[26] The table of ratios with the dates of high and low seasonal points and with an average for the nine-year period is given in Table VII.

An average of all the markets for the nine years shows an average space occupancy of 52 per cent, with 75 per cent of space occupied when stocks were high, and 24 per cent occupied when stocks were low. Chicago, Duluth, and Kansas City show high ratios below the average of the highs for all markets. Duluth, Kansas City, Omaha, and St. Louis show low ratios below the average of the lows for all markets; while Duluth and Kansas City show average ratios below the average of the average ratios of all markets for the nine-year period.

The Minneapolis market for the nine-year period shows the most intensive use of space on the basis of these ratios, having the highest ranking for low, high, and average ratios. Chicago may be said to rank second, St. Louis third, Omaha fourth, Kansas City fifth, and Duluth sixth. It is noteworthy that expansion of storage space has been greatest at the two last-named markets since 1928.

The most uniform use of space is made at Chicago, the range between high and low ratios for the nine years being 40. Duluth, Kansas City, and Minneapolis have a somewhat wider range between high and low points, while Omaha and St. Louis show much wider ranges than Chicago. At Chicago the lowest ratio of stocks to space in any one year was 9 per cent (1923 and 1925). The highest ratio in any one year was 90 per cent (1929). The lowest average use of space was 39 per cent (1923). The highest average use of space was 72 per cent (1929). The widest range in use of space in any one year at Chicago was in 1925, while 1927 showed the most uniform use of space.

[26] Data of space are from the annual reports of these markets, while the data of stocks are from the *Chicago Daily Trade Bulletin*.

TABLE VII

RATIOS OF LOW, HIGH, AND AVERAGE STOCKS OF GRAIN TO ELEVATOR CAPACITY AT SELECTED MARKETS, 1921–29

MARKETS	1921		1922		1923		1924		1925		1926		1927		1928		1929		AVERAGE 1921–29
	Week	Ratio	Week	Ratio	Week	Ratio	Week	Ratio	Week	Ratio	Week	Ratio	Week	Ratio	Week	Ratio	Week	Ratio	Ratio
Chicago:																			
Low stocks	May 21	35	Dec. 2	27	July 21	9	July 19	28	Sept. 12	9	July 31	43	July 23	42	July 21	26	July 20	51	32
High stocks	Oct. 22	71	Mar. 18	70	Dec. 29	52	Oct. 15	84	Jan. 24	87	Nov. 20	67	Mar. 21	73	Dec. 29	56	Oct. 19	90	72
Average	.....	56	.....	50	.....	39	.....	55	.....	57	.....	56	.....	55	.....	44	.....	72	54
Duluth:																			
Low stocks	Jan. 22	12	Aug. 5	7	July 11	11	Aug. 23	4	Aug. 22	15	Aug. 7	18	Aug. 6	7	Aug. 11	18	June 15	45	16
High stocks	Sept. 24	37	Apr. 22	63	May 5	68	Oct. 8	63	Apr. 18	83	May 1	74	Apr. 9	63	May 5	66	Apr. 20	74	66
Average	.....	22	.....	29	.....	34	.....	40	.....	55	.....	52	.....	37	.....	45	.....	61	43
Kansas City:																			
Low stocks	June 25	17	Nov. 25	20	July 21	11	July 5	25	July 25	10	July 3	14	July 2	21	July 7	13	June 22	52	21
High stocks	Oct. 15	74	Mar. 4	68	Dec. 29	69	Oct. 1	91	Jan. 3	82	Aug. 28	59	Dec. 31	59	Sept. 22	68	Oct. 19	76	71
Average	.....	41	.....	37	.....	36	.....	62	.....	40	.....	41	.....	43	.....	50	.....	67	48
Minneapolis:																			
Low stocks	June 4	23	Aug. 12	38	Aug. 18	33	Aug. 23	23	Aug. 8	35	July 24	48	Aug. 13	14	Aug. 18	18	July 20	53	33
High stocks	Dec. 31	79	Jan. 7	78	Dec. 29	70	Dec. 27	92	Feb. 14	94	Feb. 27	89	Jan. 8	76	Dec. 29	87	Nov. 9	84	84
Average	.....	44	.....	56	.....	58	.....	50	.....	71	.....	71	.....	50	.....	53	.....	69	59
Omaha:																			
Low stocks	May 28	18	July 29	28	July 21	17	July 26	23	July 11	8	July 10	29	May 28	21	July 21	6	June 29	39	21
High stocks	Oct. 15	62	Mar. 18	74	Dec. 29	67	Oct. 15	82	Dec. 26	64	Oct. 16	78	Feb. 12	68	Dec. 29	78	Sept. 21	92	75
Average	.....	39	.....	48	.....	43	.....	52	.....	40	.....	59	.....	50	.....	49	.....	74	52
St. Louis:																			
Low stocks	May 14	14	July 8	19	July 7	5	July 19	16	July 18	16	May 22	15	June 18	39	July 14	20	June 22	44	22
High stocks	Oct. 15	85	Mar. 4	77	Mar. 3	82	Sept. 27	79	Feb. 7	80	Nov. 13	97	Feb. 12	82	Dec. 1	89	Oct. 5	82	84
Average	.....	54	.....	43	.....	36	.....	48	.....	51	.....	61	.....	61	.....	59	.....	68	54
Average:																			
6 markets:																			
Low stocks	.....	20	.....	23	.....	14	.....	20	.....	16	.....	28	.....	24	.....	19	.....	47	24
High stocks	.....	70	.....	72	.....	70	.....	82	.....	82	.....	77	.....	70	.....	74	.....	83	75
Average	.....	43	.....	44	.....	41	.....	51	.....	52	.....	57	.....	49	.....	50	.....	69	52

Except for 1921 and 1922, ratios of stocks to storage space were uniformly low at all markets in all years in either June, July, or August, at or near the end of the crop year. There is no such uniformity to the high ratios. At Duluth, the high ratio is reached, with two exceptions, in April or May just at the opening of navigation on the Great Lakes. At Minneapolis and Omaha, high ratios are shown in the late fall or winter months. These markets are influenced by the time of harvest of the spring wheat crop. Kansas City reaches a high point more often in the months of August, September, and October, thus reflecting the time of harvest of the winter wheat crop. Both Chicago and St. Louis show considerable irregularity with respect to the date of high ratio. It may occur in the late fall, winter, or early spring months. All markets except Duluth show high ratios of stocks to space at abnormally early dates in 1929, reflecting the accumulation of grain due to large carry-over and slowing down of exports.

If a ratio of 90 per cent be taken arbitrarily to represent a capacity load for any of these markets, then this ratio was reached or exceeded only six times in the nine years: at Chicago in 1929, at Kansas City in 1924, at Minneapolis in 1924 and 1925, at Omaha in 1929, and at St. Louis in 1926. If the above ratio be taken as indicating a capacity load, then there was for the nine-year period an average capacity in excess of peak load of 18 per cent at Chicago, 24 per cent at Duluth, 19 per cent at Kansas City, 6 per cent at Minneapolis, 15 per cent at Omaha, 6 per cent at St. Louis, and for the combined markets 19 per cent. The largest excess for any year for the combined markets was 20 per cent in 1921, 1923, and 1927; the least excess 7 per cent in 1929. In considering the flexibility of grain storage space, it must be remembered that mill storage and private industry storage offer possibilities of expansion at most of the markets.

Only when general economic conditions affecting the grain markets are uniform is the use of space uniformly affected at all markets. An example of this uniform action is the year 1929 when high, low, and average ratios of space occupancy are above the nine-year average for all markets simultaneously. Again in 1921, 1922, and 1923, the average occupancy ratios for all mar-

kets (except Chicago and St. Louis in 1921) are simultaneously below their nine-year average. In these years exports were moving freely and the grain did not remain long in the elevators. In 1929, the opposite condition is met and all the ratios are abnormally high. Except for the cases here noted, the markets are variously affected in the degree to which an effective use of space is obtained by the varying ability of different markets to accumulate stocks of grain on the one hand, and the expansion or contraction of storage space on the other.

TABLE VIII

GRAIN ELEVATOR SPACE TURNOVER AT INTERIOR TERMINAL MARKETS*

Year	Chicago	Duluth	Kansas City	Minneapolis	Omaha	St. Louis†
1921	7.22	2.27	5.72	3.96	5.61	.....
1922	7.64	3.33	5.09	4.76	7.64	.....
1923	4.89	1.96	3.97	4.34	6.64	.....
1924	5.22	4.51	5.00	4.57	7.67	.....
1925	4.15	3.39	3.63	4.66	4.87	13.13
1926	3.74	1.91	3.46	3.39	5.07	11.11
1927	4.30	4.13	3.86	3.87	6.19	9.05
1928	4.79	3.46	4.51	4.15	5.26	12.67
1929	3.59	2.94	4.22	2.78	5.17	10.25
Average	5.04	3.10	4.32	4.00	5.94	11.24

* Turnover is calculated on the basis of commercial elevator space divided into net movement of stocks of grain through the elevators. This latter figure is obtained from stocks on hand at the beginning of the year plus annual receipts, less stocks on hand at the end of the year.

† The rate for St. Louis for 1921–24 was not computed because of through-billed cars included in the receipts.

In order to appraise fully the degree of use of grain elevator space, a space turnover figure as well as a ratio of stocks to space should be available. There are difficulties in the way of accurately reporting turnover and the data of Table VIII must be taken as approximate (Table VIII). These difficulties are traceable to the fact that in the earlier years of the period some through-billed cars were being reported in the receipts at Chicago, and a considerable number in the receipts at St. Louis. A further difficulty arises at such markets as Kansas City, Minneapolis, and St. Louis, due to the fact that a considerable percentage of total grain receipts move through mill and industry elevators which are not

included in computing the turnover for commercial space. The turnover figures must, therefore, be considered a maximum.

The turnover rate at Duluth is low because of the peculiar conditions under which this market operates. Practically no grain moves out of Duluth after the close of navigation on the lakes. The rate of turnover at St. Louis and at Omaha tends to be large because of the small amount of space at these markets relative to grain handled. Space turnover is, in most instances, in inverse relation to the ratio of space occupancy. When exports are moving freely as in 1921 and 1922, average use of space is at a minimum while turnover rates for most markets are high. The reverse condition in 1929 seems to result in an opposite relationship.

In an attempt to rate the markets on a composite of the two measures of use of space, the nine-year average ratio of space to stocks in storage at each market is divided by the average turnover for each market for the same period. The result indicates the number of times the average stock of grain in storage at the market during the year was turned over. The following ratings result: St. Louis 20.81, Omaha 11.42, Chicago 9.33, Kansas City 9.00, Duluth 7.21, Minneapolis 6.78. It appears that the milling centers and Duluth, because of peculiar geographical conditions, have the lowest ratings. The merchandising centers have the highest ratings.

On the basis of the foregoing analysis of use of terminal elevator space, it seems reasonable to conclude that present facilities are ample to care for the flow of grain to terminal markets. The evidence seems clear that amount of space quickly adjusts itself to an expansion or contraction in the amount of grain coming to market. At Chicago there are many elevators which could with profit be replaced by larger and more modernly equipped houses. Duplication of these facilities by any rival grain-marketing organization would be economically unwise. There may, of course, develop emergencies like the present when a large carryover is added to a new crop and demand for grain from abroad dries up. But such conditions are not typical and should not be made the basis of long-run planning.

Storage properties at Chicago have an important relation to

the futures market through the holding of stocks of contract grain available for delivery on future contracts. From time to time there has been agitation for an increase in the amount of public and regular elevator capacity to facilitate delivery of contract grades against which futures are outstanding. Over the period 1920–30 public elevator space has increased from 23.54 per cent of the total in 1920 to 33.54 per cent in 1930. Space under custodian rule has declined from 59.15 per cent to 46.98 per cent. Private space has fluctuated in amount from year to year but has remained most of the time around the average for the period of 23.54 per cent. Like averages for public space are 31.34 per cent and for space operated under the custodian rule of the Board of Trade,[27] 45.12 per cent.

On four occasions[28] during the period the emergency rule of the Board of Trade allowing delivery to be made in cars on track in the terminal has been invoked. This has been effective in preventing "corners" but has not kept the futures price from fluctuating rather widely in response to the sudden reversal of grain supply conditions caused by the operation of the rule. The testimony of elevator operators and of the Federal Trade Commission[29] seems conclusive on the point that there is no profit for the public elevator operator who must look to storage charges alone for his income. Any marked increase in the amount of public elevator space must come as a result of the modification of present state law[30] or through state owned and operated properties. Either of these solutions seems unlikely at the present time.

Whether more grain storage space will be needed at interior terminal markets over and above replacements of present space is a difficult question to answer. Certainly there is complete justification for additional storage space so far as it may be accessory to the milling of flour and feed or other industrial use of grain. The real issue is whether more space is needed for merchandising

[27] These are private houses operated under the supervision of the weighmaster of the Board of Trade.

[28] 1921, 1922, 1929 rye only, 1930 (March).

[29] Report on *The Grain Trade*, III, 147.

[30] The law under which public elevators operate in Illinois forbids the mixing of grain of unlike grades.

surplus grain. If the American farmer can continue to lower the cost of wheat production and can sell in the world's markets in competition with producers in other countries, then we can look for more or less stability in the grain storage business in terminal markets. If, on the other hand, this country is in a declining stage of production so far as the export market is concerned, then we must expect only that slow growth in business which is timed with the growth of population in the country. Changes in habit of cereal-grain consumption, at the present writing, point away rather than toward any unusual expansion of the domestic market.

The natural advantages which Chicago enjoys as a distribution center cannot be taken away; rather these advantages are certain to be enhanced in the near future by the construction of the St. Lawrence waterway and the completion of the deep waterway to the gulf. Domestic grain will continue to be cheaply distributed over the network of railways reaching out from Chicago to cover the eastern half of the country. Thus the city will always remain an important distribution point in any scheme of grain marketing. On this sound basis of natural geographical advantage, the grain storage business at Chicago can continue to maintain itself in competition with the other markets.

E. A. DUDDY

THE MARKETING OF FURNITURE

LOOKING through the furniture trade papers of the last few years, one is impressed by the large number of articles and editorials dealing with the supposedly unsatisfactory condition of the industry. Complaints of low prices and meager profits, of external competition and internal dissension, of excessive marketing costs and inadequate consumer patronage repeatedly come to the reader's attention.

While it is only necessary to mention some of these complaints to demonstrate their exaggerated character, it is impossible to form an accurate estimate of the degree of their validity without a closer examination of the facts in connection with which they have been made.

It will be one of the chief aims of the writer, therefore, to analyze certain phases of the economic position of the industry, describing some of the facts which have an important bearing on the industry's marketing problems as well as discussing some of these problems. Before starting this task, however, it will be advisable to describe the marketing structure of the industry and some of its marketing policies. Such is the purpose of the present article.

GEOGRAPHICAL ASPECTS OF FURNITURE PRODUCTION

The marketing system and practices of any industry are in large part determined by the geographical distribution of the producing areas, and by the physical nature of the commodity that the industry sells. The truth of this is well illustrated by the furniture business.

Furniture manufacturing in this country is highly localized, most of the output being produced in a relatively small number of states. As is true of the history of many other American industries, the history of furniture manufacturing, in its geographical aspects, is closely linked up with the westward movement of population, the improvement and extension of transpor-

tation facilities, and the opening up of the nation's vast natural resources.

At first concentrated along the Atlantic seaboard, the industry moved westward, firmly establishing itself in the East North Central states, and more recently in California, in North Carolina, and in Virginia. Table I shows, in percentages, contributions of the leading states in the industry to the total output in 1859 and in 1927. It will be observed that important changes have taken place in the relative standing of the states, and also

TABLE I

PERCENTAGE CONTRIBUTIONS OF THE LEADING STATES IN THE FURNITURE INDUSTRY TO THE TOTAL VALUE OUTPUT IN 1859 AND 1927*

1927		1859	
New York	17.9	New York	28.0
Illinois	12.6	Massachusetts	16.3
Michigan	10.7	Ohio	14.1
Indiana	8.9	Pennsylvania	11.4
Pennsylvania	6.1	Indiana	3.5
North Carolina	6.1	Illinois	3.1
Ohio	5.9	Maryland	2.3
Wisconsin	5.6	Connecticut	2.0
All others	26.2	All others	19.3
Total	100.0	Total	100.0

* Based on statistics given in the *Census of 1860*, "Manufactures," totals under the various states; and in the *1927 Census of Manufactures*, pp. 528, 529.

that while there has been a noticeable geographical expansion in the industry, it is still largely concentrated in a relatively few states.

Table I does not adequately show the extent to which there is territorial specialization, however, since in it the various kinds of furniture are lumped together. More specific analysis shows more fully the extent of this specialization. Indiana, for example, which in 1927 manufactured only 8.9 per cent of the total output, in the same year turned out 55.0 per cent of all the wooden household kitchen furniture, contributing to one item in this class—cabinets—79.9 per cent; North Carolina, with 6.1 per cent of the total output, manufactured 18.2 per cent of all the wooden household bedroom furniture; and Michigan, with 10.7 per cent of the total output, made 30.6 per cent of the furniture for public buildings.

Within the states which lead in the manufacture of furniture the industry is concentrated in certain cities. Table II shows the number of establishments, the average number of wage earners, and the value of the products of the furniture industry in some of these cities in 1927.

Table II contains data for cities having a population of 100,000 or more. There are a number of smaller cities, however, which are outstanding in the furniture industry. Some of these cities, with the value of their furniture output in 1925, are Jamestown, New York, $26,327,870; Rockford, Illinois, $16,061,913; High Point, North Carolina, $11,291,615; and Sheboygan, Wisconsin, $10,991,186.[1]

TABLE II

FURNITURE MANUFACTURING CITIES, 1927*

City	Number of Establishments	Average Number of Wage Earners	Value of Products
New York	394	11,221	$75,109,394
Chicago	284	11,733	65,815,363
Grand Rapids	70	12,092	55,810,048
Los Angeles	105	4,105	23,089,070
Philadelphia	125	3,636	19,486,239
Cleveland	28	1,985	11,982,728
St. Louis, Mo.	58	2,438	11,867,474
Boston	68	1,901	10,742,358
San Francisco	62	1,812	10,733,296
Evansville	25	2,640	10,688,169

* *1927 Census of Manufactures.*

Just as a number of states specialize largely in the production of certain kinds of furniture, so also is there specialization in some of the cities. Grand Rapids is famous for its high-grade case goods. Chicago, while making a wide variety of furniture, is especially noted for its upholstered goods.[2] High Point is known for its medium-grade furniture, although there is a tendency toward the production of better grades.[3]

[1] Figures taken from the *Furniture Manufacturer*, March, 1928, p. 51.

[2] See *Survey of the Furniture Trade*, p. 3. Issued by the Chicago Association of Commerce, 1925.

[3] See *The Economic Development of the Furniture Industry of the South and Its Future Dependence upon Forestry*, p. 16. This bulletin was issued by the Department of Conservation and Development of the state of North Carolina in 1926.

It is evident from the facts presented that furniture-manufacturing is characterized by a high degree of localization. If the population were concentrated in the same states as the industry not only would the marketing system and the marketing policies of the industry be different from what they are but some of the marketing problems of the industry would be less difficult to handle. There is a marked disparity between population concentration and furniture-manufacturing concentration, however. Seventy-four per cent of the furniture produced in the country in 1927 was manufactured in eight states whose combined population constituted 41 per cent of the total population. Even these percentages, however, do not show accurately the degree of the disparity, because some of these states specialize to a considerable extent in making certain kinds of furniture.

The industry's marketing organization and methods are not influenced by geographical factors alone. The very nature of furniture—its bulky character, its weight, its relatively small value for its weight and bulk—is also of some influence, and makes the geographical factors of still more consequence.

THE FURNITURE MARKETS

Perhaps the influence of the factors just mentioned is nowhere more evident than in the importance attained by the furniture markets. These periodical markets, held in the larger furniture-manufacturing centers, occupy a position of great prominence in the distribution of furniture. In few other industries, if in any, do markets play such a leading rôle, and few, if any, of the other leading shows and markets are as old as those in the furniture trade. The Boston Furniture Exchange, which is supposed to have been the first furniture market in the United States, was established in 1874.[4] The first Grand Rapids Market was held in the later seventies, and the first in Chicago about forty years ago. Compared with the latter two national markets in point of age may be mentioned the following shows whose beginnings were approximately as follows: automobile, 1900; costume, 1895;

[4] *Furniture Record*, January, 1928, p. 42.

gas, 1897; electrical, 1897; business, 1904; chemical, 1914; motor-boat, 1904; flower, 1913.[5]

There are definite reasons why furniture markets were established early, and why, once started, they grew rapidly. Because of its bulk and weight furniture does not lend itself to inclusion in a traveler's sample case. Consequently, catalogues and photographs must be extensively employed. In these circumstances, if the markets were non-existent and if visits could not be made conveniently to the factories or wholesale showrooms, a dealer would be compelled to buy furniture without seeing samples. From our brief study of the geographical aspects of furniture production it is obvious that much furniture would have to be bought in this way.

While, with standardized articles, such a method of buying is satisfactory, it is manifestly not satisfactory in the buying of furniture, because of the constant changes in construction, design, and finish.

The markets, held from one to four times a year at various points in the country, convenient to most dealers, give the dealer the opportunity of inspecting the furniture before he buys. And even though he does not place his orders immediately, he will have seen the furniture in which he is interested and will know what he is going to get when he does order.

Attendance at the markets, moreover, enables retailers to keep well informed as to the latest developments in furniture styles—the markets themselves being of some influence in causing style changes—and also affords them the opportunity of gaining valuable knowledge concerning merchandising methods.

The leading furniture markets are held in Chicago and Grand Rapids, while markets of lesser importance are held in a number of other cities, including New York, High Point, Jamestown, Boston, San Francisco, Los Angeles, Tacoma, Evansville, and St. Louis. Two regular markets a year are held at Chicago and Grand Rapids, in January and July, and in addition Grand Rapids holds two preliminary markets in May and November. The exhibits at Grand Rapids are housed in a number of buildings,

[5] R. S. Alexander, "Commercial Fairs and Expositions," in the *Harvard Business Review*, July, 1927, p. 433.

while those at Chicago are largely accommodated in the mammoth American Furniture Mart. The Mart is open the year around; some years ago it was stated that 40 per cent of the spaces are open all year. Friday is a sort of "market day" and the number of spaces that are open on that day increases to 65 per cent of the total.[6]

According to a recent report of the American Furniture Mart, there are 743 lessees and sub-lessees in the building, representing 241 cities located in 29 different states, and one foreign city, London, England.[7] With hundreds of exhibitors patronizing the Mart, one would naturally expect to find a wide variety of furniture on display, and such is the case.[8] In addition to types of furniture differing in style, construction, finish, and grade, one also sees other articles which one might not expect to come across in a furniture-market building. Artificial flowers, baby carriages, bird cages, carpet sweepers, china and pottery, stoves, wrought iron, and many other kinds of articles are exhibited. These commodities suggest what one might find on sale in a retail furniture store.

The public is not admitted to the Mart, nor to the other markets. The markets are held solely for the retailers, although, of course, their influence extends beyond the retailers.

The importance of the markets can be judged partly by the number of dealers they attract. Table III shows the attendance at the two regular markets held at Grand Rapids and Chicago during the last few years.[9]

Buyers come from long distances to visit these two markets. At the 1928 Mid-winter Market, for example, buyers were present at both places from the District of Columbia and from every

[6] See *Furniture Record*, June, 1925, p. 309.

[7] *Fourth Annual Report of the American Furniture Mart Building Corporation* (1927), p. 10.

[8] Some idea of the volume of goods transported to the Mart for display purposes can be gathered from the fact that for the winter market of 1928, 1,500 carloads of samples were brought in.

[9] In comparing the Chicago and Grand Rapids markets from the standpoint of attendance, it is not enough to use simply the number of buyers present, or the number of firms represented. Some consideration should also be given to the size of the firms represented. Using credit rating as the basis for size, the two places

state in the Union with the exception of Nevada. In addition, both attracted buyers from Canada, and Grand Rapids had two from England. Some of the markets are also attended by a small number of visitors from other countries.

The visit of a furniture retailer at the markets does not necessarily mean that he places his orders at the time of his visit. He may simply examine the exhibits and defer his purchases until he actually needs the goods. It appears that this practice is growing in popularity. Retailers apparently are not concentrating

TABLE III

ATTENDANCE AT THE CHICAGO AND GRAND RAPIDS MARKETS*

YEAR	MARKET	TOTAL ATTENDANCE	
		Chicago	Grand Rapids
1927	Winter	6,064	2,185
1927	Summer	5,734	2,132
1928	Winter	6,487	2,465
1928	Summer	6,757	2,141
1929	Winter	5,288	1,107
1929	Summer	6,296	1,737
1930	Winter	5,757	1,183

* Figures from the *Fourth Annual Report of the American Furniture Mart Building Corporation* (1927), p. 10; and from Mr. W. J. Killough of the American Furniture Mart.

their buying as much now as they did formerly, but are placing their orders more evenly throughout the year, as Table IV indicates. The table shows for a number of years the months in which the largest volume and the smallest volume of new orders—according to number of days' production—were received in the Grand Rapids district. It will be observed that the ratio between the minimum and the maximum for each of the years is moving upward, until 1929; this means that fluctuations in the volume of new orders received by these manufacturers at least are less vio-

compared as follows for the 1928 Mid-winter Market: Chicago, 4,115 firms represented, with an average credit rating of $151,662; Grand Rapids, 1,780 firms represented, with an average credit rating of $211,595. (See Tables I and II of a report issued by the Bureau of Furniture Research of the American Furniture Mart, March 31, 1928.) It is not to be inferred from the above percentages that the large firms disregard the Chicago market. It is more likely true that relatively more of the smaller retailers attend the Chicago market and hence bring the average down.

lent than they were a number of years ago. The small percentage for 1929 is undoubtedly largely due to the fact that business toward the end of the year fell off noticeably. In December the volume of new orders received amounted to only eleven days' production, a smaller volume than for any other month in the years covered by the table. Both seasonal and cyclical influences were responsible for this small volume. More will be said about spreading out the placement of orders when the question of hand-to-mouth buying in the furniture industry is discussed.

TABLE IV

NEW ORDERS RECEIVED BY FURNITURE MANUFACTURERS IN THE GRAND RAPIDS DISTRICT*

YEAR	MAXIMUM		MINIMUM		PERCENTAGE MINIMUM IS OF MAXIMUM
	Month	Volume (Number of Days' Production)	Month	Volume (Number of Days' Production)	
1929.....	May	49	December	11	22.4
1928.....	November	50	December	18	36.0
1927.....	January	46	December	13	28.3
1926.....	January	53	December	15	28.3
1925.....	January	57	April	14	24.6
1924.....	January	52	December	12	23.1

* Absolute figures from the *Survey of Current Business*, June, 1926, p. 24; February, 1929, p. 71; August, 1929, p. 71; August, 1930, p. 72.

BUYING SYNDICATES

Much of the buying of furniture is done by buying syndicates, or co-operative buying groups. With the rapid development of chain stores, and with the growing volume of furniture sold by department stores, the small retailer has been placed at some disadvantage because of his inability to obtain the discounts that the other institutions, with their large purchasing power, can command. In addition, the competition of other industries—the so-called "new competition"—has unfavorably affected the furniture retailer, regardless of size. Largely as a result of these factors, buying groups have attained some importance in the industry.

The operations of these groups are largely confined to the buying of the medium and lower grades of furniture. The buying for special customers of expensive pieces of furniture—and there-

fore not in large quantities—cannot be done as satisfactorily through the syndicate as the buying of cheaper lines.

The fundamental purpose of a buying syndicate is to give to its members the financial advantages that any organization with large purchasing power can command. These financial benefits may be received in various ways. A writer connected with Jordan's of Oklahoma City has stated:

> We have attended our fourth buying market in this group buying and each time we have met together and shopped in committees we have shown progress in getting better discounts, also better merchandise. It tends to standardize our stocks more, centralizing our outstanding indebtedness, takes less time and expense at the markets. It saves much time at home that used to be taken up with our buyer, who is usually the store owner himself or his best salesman, in looking at photographs of traveling salesmen. Traveling salesmen in the larger cities are pretty numerous and consume lots of valuable time.[10]

In the quotation some of the ways in which a retailer may profit financially by being a member of a buying syndicate have been set forth. Discounts represent a distinct financial benefit. Better merchandise can command a higher price. Standardized stocks, while perhaps involving a certain loss through the consequent inability of the dealer to supply rush orders for odd pieces, mean a gain through having less capital tied up in a wide variety of patterns. The centralization of indebtedness permits a reduction in bookkeeping expenses. The spending of less time at the markets, and with traveling salesmen at the store, allows the buyer to engage in other activities about the business.

While some of the syndicates are well organized and look after their affairs in a systematic way, others are loosely organized and carry on their activities discontinuously and in a careless manner. Some also are organized temporarily and disbanded after the members have reaped the benefits of their placing of pooled orders. It has been the uncertainty, the lack of responsibility, and the transient nature of their dealings which has characterized so many of the syndicates that has caused a great deal of criticism to be leveled against them.

In a later discussion of recent trends and problems in the mar-

[10] *Furniture Manufacturer*, November, 1927, p. 39.

keting of furniture the matter of syndicate buying will be discussed at greater length, and some of the obstacles in the way of the achievement of the objects which have already been mentioned will be pointed out.

TRAVELING BROKERS

Traveling brokers, or manufacturers' agents, operating on a commission basis, are used extensively in the distribution of furniture. Many furniture men believe that they form an unsatisfactorily large part of the total sales force. A few years ago it was estimated that 70 per cent of the furniture sold through retail stores reaches the retailers through these brokers.[11] According to a more recent estimate, by Mr. J. H. Warburton, sales manager of the Marietta Chair Company, upward of 75 per cent of the furniture is sold by commission salesmen.[12] And the managing director of the National Furniture Manufacturers' Association, Dr. A. P. Haake, says that approximately 60 per cent of the sales force of the manufacturers is made up of men who travel for more than one factory.[13]

Due largely to the fact that many furniture manufacturers have a small annual volume of sales, as well as to the fact that they may be attempting to cater to a wider sales area than the immediately surrounding one, it is financially inexpedient for them to have their own sales force. The small manufacturer, or one specializing in the production of a limited line of furniture, is likely, therefore, to engage a salesman who already represents five or six other lines of furniture.

The manufacturer served by the traveling broker is able to cater to a larger market area, and perhaps dispose of his products more profitably, than he could if he had one or two salesmen handling his furniture exclusively. It would be costly for him to attempt through his own salesmen to cultivate a large market area; to attempt to cultivate intensively a smaller area might possibly prove unprofitable because of its limited extent or because of the keenness of competition within the area. The traveling broker helps to overcome some of the difficulties due to specialization

[11] *Nation's Business*, April, 1925, p. 68.

[12] Letter to the writer, July, 1929.

[13] Interview, August 1, 1929.

by individual manufacturers in the kinds of furniture they produce, and to territorial specialization.

The strategic position occupied by the traveling broker, however, gives him considerable power, which he may use to the disadvantage of some of the manufacturers whom he represents. The inordinate extent to which the success or failure of furniture manufacturers rests in the hands of these commission men has been largely the cause for much of the dissatisfaction with their activities. The problem of the traveling broker, which has been described in such terms as "one of our greatest problems," and as "the greatest hindrance in the furniture industry," has received much attention in the trade papers; we shall return to it later.

DIRECT SELLING

While the direct sale of furniture by the producer to the consumer was a common practice until the development of transportation facilities and the tapping of rich forest resources made possible a more extensive geographical division of labor and a larger scale of operations, it is no longer characteristic of the industry. Most furniture is now produced in a small number of cities, and does not reach the consumer until it has passed through the hands of one or more middlemen. Even in those large centers of population in which the manufacture of furniture is concentrated, such as New York and Chicago, little is sold directly to the public. Of course one will find in these cities many small shops making cabinet and case goods, or engaged in the upholstering business, whose products are sold directly to the public; but the annual value of furniture sold in this manner is small compared with the total annual furniture sales of the nation.

Nevertheless, it is likely true that during recent years there has been an increase in the volume of furniture sold in this way. According to an editorial in one of the trade papers, some of the smaller factories, unable to keep up with the keen competition for dealers' patronage, have gone into direct selling, and "There is every reason to believe that more and more factories will add a retail department to their organization to insure a steady and dependable as well as profitable outlet for their products."[14]

[14] *Furniture Manufacturer*, March, 1927, p. 53.

Direct selling is not necessarily limited to the smaller furniture factories. There is a possibility that one will see in the furniture industry a duplication of the United Drug system. "It is a well known fact that the same method of operation is being considered seriously by furniture manufacturing interests who plan to form large factory units with chains of retail outlets."[15]

While direct selling from manufacturer to consumer has not developed to a very large extent up to the present, it is possible that we shall see a more rapid growth in the coming years.

Claims have sometimes been made by furniture advertisers of the direct sale of furniture from factory to consumer, which, when investigated, were found to be deliberately false or misleading. The expression "Direct from the Factory to You," and other intimations that lead the consumer to believe that he is buying his furniture direct from the factory, are enticing to some people because of their expectation of lower prices. Retailers in general are aware of this fact, and a few have been unable to resist this temptation to mislead the public. The Federal Trade Commission has investigated a number of such cases, and has issued orders to cease and desist.[16]

THE TRANSPORTATION OF FURNITURE

Because of the saving effected in shipping in carload instead of in less than carload lots, manufacturers in the principal furniture-producing cities have formed forwarding associations. By pooling their shipments they are able to make a very substantial reduction in the costs of transportation. These associations also enable those whom they serve to cover a larger part of the country, reaching areas which could not profitably be reached by l.c.l. shipments.[17]

[15] *Ibid.*, June, 1929, p. 60.

[16] See, for example, the *Annual Report of the Federal Trade Commission for the Year Ending June 30, 1927*, pp. 132, 134; *year ending June 30, 1926*, pp. 104, 105.

[17] "In 1922 the Sheboygan Furniture Forwarding Company was organized for the purpose of concentrating l.c.l. shipments at their warehouse from the plants in Sheboygan and in surrounding territories, to be included in pool cars for distribution at various points throughout the country; and primarily to reach more distant markets for their products, which markets are not available to l.c.l. shipments." *Condensation of Record*, I.C.C. Docket 17000–5, Rec. 2483–84, evidence

While shipping furniture through the associations in carload lots means that the shipper must do the loading and the consignee the unloading—thus involving a certain amount of expense—shipping in carload lots is not only cheaper than shipping in less than carload lots, but is usually faster, and less inconvenience is caused through loss and damage claims.

The forwarding associations located in the chief furniture-manufacturing cities are also of service to manufacturers in the surrounding territory, since the latter having furniture for distant points can ship it l.c.l. to the forwarding associations, and then have it included in pool cars to its destination.

Like the furniture manufacturers, the furniture jobbers join in operating forwarding companies. The furniture jobbers in St. Paul and Minneapolis, for instance, co-operate in the Twin City Furniture Forwarding Company which, during 1927, shipped 175 carloads.[18]

For distributing furniture within a radius of two or three hundred miles the motor truck has become very useful. In addition to enabling the furniture manufacturer to give faster service in making his shipments, at perhaps a lower cost, and saving him the trouble and expense of crating the articles that are shipped, the use of the truck tends to reduce the amount of breakage involved.

Some companies cultivating a large market area have simplified their transportation problems by establishing branch factories or warehouses at distant points. The Simmons Manufacturing Company, the Kroehler Manufacturing Company, and S. Karpen and Brothers, are conspicuous examples. Others, while not establishing their own warehouses, make use of warehouse facilities at strategic centers.

Other manufacturers are learning, however, that their distribution is becoming increasingly localized. The kitchen cabinet com-

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of Mr. J. R. Davy, Traffic Manager of the Sheboygan Association of Commerce. The writer consulted this *Condensation of Record* at the office of the National Retail Furniture Association, Chicago.

[18] "There is a strong tendency for the loading of pool cars of furniture in this territory and the practice of direct shipments from manufacturing points to destinations through jobbing or distributing points is also growing" (*ibid.*, Rec. 2173–74).

panies of Indiana, for example, are finding it necessary to cater to a smaller market area.

> The competition which they have to meet has changed materially in the past few years; they are unable to distribute very far from home any more; the business is largely localized; by adding other lines to their business, up to this time, they have been able to practically maintain their output, but it is local; they used to distribute in 42 states but he thinks they do not distribute to over 20 now.[19]

There is still, however, a large degree of geographical specialization in the industry, and this inevitably results in transportation costs being an appreciable part of the total marketing expenses. But by the organization of furniture-forwarding associations, the use of motor trucks for short hauls, and the establishment of branch factories and warehouses, not only is the delivery of furniture expedited but transportation costs are reduced.

THE WHOLESALER

The wholesaler does not occupy a place of outstanding prominence in the marketing of furniture, except in parts of the country where his presence can be explained largely in geographical terms. While there are hundreds of so-called "wholesalers" engaged in selling furniture, a relatively small part of these actually warehouse furniture and perform the functions usually associated with this agency in commodity distribution. According to a *Directory of Wholesale Distributors of Furniture in the United States,* issued by the National Wholesale Furniture Association, there are fewer than one hundred wholesalers and jobbers in the country. While the association admits that the list is incomplete, one may safely assume that it includes most of the leading firms. Of those mentioned, the size and standing of 81 could be readily ascertained. Their average rating was $322,000. Nine were in the $1,000,000 class, and six in the $500,000 to $1,000,000 class.[20]

In addition to the "wholesalers" who do not warehouse furniture, but who maintain showrooms, there are some retail stores which do a little wholesale business; but the volume of this trade is usually so small as to preclude regarding these establishments

[19] *Ibid.*, Rec. 2320–22. See also Recs. 1353–57, 1362, 2559–62.

[20] See the *Nation's Business,* April, 1925, p. 64.

as wholesale firms. There are a few large department stores, however, such as Marshall Field and Company of Chicago, where both the retail and the wholesale business are of importance.[21]

Some wholesalers also engage in manufacturing. The Abernathy Furniture Company of Kansas City, Missouri, for example, in addition to having their wholesale establishment in Kansas City, also have a factory at Leavenworth.[22] This plant, however, does not supply all the furniture that the company sells.

There are individuals and organizations in the furniture industry calling themselves wholesalers without having either a warehouse or a showroom; these are really manufacturers' agents and not wholesalers.

The principal wholesale centers of the country are in the states west of the Mississippi. Except for the Fort Smith, Arkansas, district there is no district between the Mississippi and the Pacific coast in which furniture manufacturing is carried on very extensively. In this region the wholesaler is of outstanding importance.

There are furniture wholesalers in the East, but they are of less comparative significance than those in the West. Not only do they differ from the Western wholesalers in the relative amount of furniture they sell in their particular region, but also in the size of the area in which they do business. The Eastern wholesaler sells in the territory immediately surrounding him, while the Western wholesaler covers much broader territory.

The service of the wholesaler is not as necessary to ensure quick delivery in the East as in the West, where the retailer is widely separated from the principal furniture-manufacturing points. In the West, the wholesaler, offering a wide variety of furniture from which the retailer can make his selections, is able to give faster and cheaper service in numerous instances than the retailer could obtain by ordering direct from the distant manufacturer. This is not true to the same extent in the East.

In the East, moreover, the proximity of manufacturing and re-

[21] The Federal Trade Commission's *Report on the House Furnishings Industries*, I, 151.

[22] *Condensation of Record*, I.C.C. Docket 17000-5, Rec. 4037–38.

tailing centers makes possible an extensive use of the motor truck by the manufacturers in making their deliveries. This helps to cut down the time elapsing between the placement of orders and the receipt of goods, and renders the fast service that the wholesaler can give—and likewise the wholesaler—less needful.

Large retail furniture organizations are also much more numerous in the East than in the West. Because of their ability to place large orders with individual manufacturers, these have less occasion to make use of the wholesaler. Many of their orders are sufficiently large to be shipped in carload lots. On the furniture that is shipped l.c.l. the freight charges are not high, compared with what they would be on similar shipments made from the East to retailers in the West, because the distance is not long.

Most of the furniture sold through wholesalers is of a medium or low grade. As to their sales, it is impossible to speak with a high degree of certainty, as accurate statistical data are not available. A number of estimates of the percentage of the furniture the wholesalers sell have been made, however. Mr. J. H. Warburton of the Marietta Chair Company estimates that 20 per cent of the furniture trade goes through the hands of wholesalers who have warehouses and show rooms.[23] Dr. A. P. Haake thinks that probably not more than 10 per cent of the furniture is sold through the "legitimate" (in the sense of having a warehouse) wholesaler.[24] The first estimate appears to be rather high; but even granting that 20 per cent is the proper proportion, it will be admitted that the position of the wholesaler in the industry is not one of outstanding prominence, except, as has already been pointed out, in certain parts of the country.

THE FURNITURE RETAILER

Retail establishments selling furniture may be divided into a number of classes. First, there is the large number of unit stores. These are not linked up with any other stores through common ownership, though they may be associated with others in co-operative ventures of one kind or another. Mail order houses han-

[23] Letter to the writer, July, 1929.

[24] Interview, August 1, 1929.

dling furniture comprise the second group; department stores selling furniture, the third; and chain furniture stores, the fourth.

The census of distribution taken in eleven cities revealed that in the cities covered 86.4 per cent of the furniture and house-furnishing stores were independent stores. These, however, made only 67.2 per cent of the sales. The chain stores made up 13.6 per cent of the total number of stores, but their sales amounted to 32.8 per cent of the total.[25] The difference in the percentages

TABLE V

INDEPENDENT FURNITURE AND HOUSE-FURNISHING STORES IN ELEVEN CITIES, 1926*

	Annual Sales	Number of Stores† Percentage	Sales† Percentage
1.....	Less than $ 5,000	28.44	1.13
2.....	5,000– 9,999	14.73	1.84
3.....	10,000– 24,999	20.86	5.83
4.....	25,000– 49,999	12.94	8.12
5.....	50,000– 99,999	11.68	14.00
6.....	100,000– 249,999	7.40	20.05
7.....	250,000– 499,999	2.16	13.25
8.....	500,000– 999,999	.94	11.13
9.....	1,000,000 and over	.85	24.65
		100.00	100.00

* *Census of Retail and Wholesale Trade*, p. 94.

† The total number of independent furniture and house-furnishing stores in the eleven cities was 2,458, and their total sales were $137,957,000.

in each case is largely due to the size of the stores. Among the independent furniture stores there are many whose sales are very small. It can be seen from Table V that about 43 per cent of the unit stores had sales in 1926 of less than $10,000, and more than 28 per cent had sales of less than $5,000. It will be noticed that the sales of the first two classes formed a very small portion of the total. Thus, while the stores with less than $10,000 annual sales amounted to about 43 per cent of the total number, the sales of these stores were a little less than 3 per cent of the total sales for all the stores.

With the growth in the number of chain stores and the increase in the volume of furniture sold by the chains, the relative con-

[25] *Census of Retail and Wholesale Trade*, p. 94.

tribution made by independent unit stores to the total annual furniture sales has been declining. Many of the unit stores, largely to place themselves on a better competitive footing, have organized buying groups and have adopted other means of co-operation.

The expansion of the chains will make it increasingly difficult for many of the small independent furniture stores to continue in business, unless they improve their merchandising methods, join buying groups, or employ other methods which will give them some of the advantages of the chains.

The volume of furniture sold by mail order houses forms a small part of the total annual furniture sales for the country as a whole, but nevertheless it is large enough to cut into the business of the independent retailer to an appreciable extent, especially in the middle-western and western states, where the mail order houses do a large part of their trade.

The selling of furniture by the strictly mail order method has certain inherent difficulties and disadvantages which place definite limitations on the amount of furniture that is likely to be sold in this manner, however. Selling furniture by description is rather unsatisfactory, for obvious reasons.

The building of good roads and the phenomenal increase in the number of motor cars have been two factors which have had an unfavorable effect on the mail order furniture business. It is now possible for prospective furniture buyers living in the country to visit the furniture stores in nearby towns and cities with greater ease and rapidity and there to examine the furniture on display and compare values before making purchases. As a result the mail order businesses suffer.

The establishment of an extensive system of retail outlets by Montgomery Ward and Sears, Roebuck will make the obstacles in the way of the mail order method of selling furniture of less significance to these particular companies, but the obstacles themselves remain.

The census of distribution for 1926 throws some light on the relative importance of department stores as outlets for furniture. Table VI shows the percentage contributions that the department

stores of Chicago, one of the cities covered by the census, made to the total sales of furniture and house furnishings in the city.

The percentages in Table VI should not be taken as representative of the department stores' contribution in the country as a whole. In many small municipalities department stores play little or no part in the retailing of furniture and other merchandise; and, in addition, the mail order houses sell a smaller proportion of the total merchandise sold in large urban centers than they do in some of the smaller communities. The figures are suggestive, however, as far as the larger centers of population are concerned.

TABLE VI

SALES OF FURNITURE AND HOUSE FURNISHINGS IN CHICAGO, 1926*

	A Total	B Department Stores	Percentage B is of A
Furniture (house)....	$82,707,500	$15,812,700	19.1
House furnishings....	91,800,400	62,926,600	68.6

* *Wholesale and Retail Trade of Chicago, Illinois*, p. 41.

An interesting recent development in retail merchandising has been the growth in the number of items that retail stores of certain kinds handle. While furniture stores have not increased the variety of their offerings to the extent that drug stores have, they have nevertheless added to the number of things they sell, and by so doing are able to offer stronger opposition to the department stores. One of the interesting facts brought out by the *1926 Census of Distribution* was the variety of goods that furniture and house-furnishing stores sell.

Perhaps the most significant of recent changes in the sphere of retail marketing has been the growth of chain stores. While this growth has been more extensive in the grocery and drug fields than in the furniture field, nevertheless it has been very noticeable in the latter.

Table VII shows an interesting relationship between the number of chain and unit stores and the volume of their sales in the eleven cities covered by the *1926 Census of Distribution*. It will be observed that slightly under one-third of the sales were made

by chain stores. If statistics were available for 1930 the percentage of the total furniture sales attributable to chain stores would likely be higher.

An important aspect of the development of the chain store principle is the establishment of so-called "neighborhood" or "community" stores. To obtain a larger share of the furniture trade in the city in which they are located, it has become the practice of some retailers to establish branches in the most favorable centers within the city, rather than simply maintaining one or two centrally-located stores. These neighborhood stores can be

TABLE VII

NUMBER AND SALES OF UNIT AND CHAIN FURNITURE AND HOUSE-FURNISHING STORES IN ELEVEN CITIES, 1926*

	Total	Unit Stores	Chain Stores
Number of stores	2,844	2,458	386
Percentage of total	100.0	86.4	13.6
Sales	$205,357,100	$137,957,000	$67,400,100
Percentage of total	100.0	67.2	32.8
Average sales per store		56,126	174,612

* *Census of Retail and Wholesale Trade*, p. 94.

operated successfully only in cities where people would experience considerable inconvenience if they had to purchase their furniture in the center of the city.

While neighborhood furniture stores have been established in increasing numbers, it is clear that in the furniture trade such stores will never become as common as they are in the grocery and drug trades. The articles sold in the last two classes of stores are largely standardized, their average price is small, and they generally require no service after they are sold. They are convenience goods. Furniture, on the other hand, is in a different category. It is not standardized to any great extent, the average sum paid out in making a purchase at a furniture store is large and hence people are willing to go some distance to make their purchases. Moreover, there are various kinds of services that must be given by the furniture dealer. Furniture is largely a shopping good, and to some extent a specialty good.

In addition to the retail outlets mentioned, there are a number

of other channels through which furniture passes into the hands of the consumer. The so-called "furniture bootlegger" sells a certain amount. While there is a tendency to describe any type of "illegitimate" furniture dealer as a "bootlegger," his actions are most characteristically expressed through the operation of what are called "stuffed flats." The *Furniture Journal Daily* describes a "stuffed flat" and tells how such establishments are operated.

> Every city of any size is harassed by operators of what are known as "stuffed flats." These operators rent houses in residential districts, fill them with new furniture, then cause classified advertisements to appear in the newspapers which infer, directly or indirectly, that the public may purchase either new or slightly used furniture at that address at greatly reduced prices. Very often the statement is made that the owners of the furniture are leaving the city or it is intimated in some way that the public will have an opportunity to buy it at a bargain.[26]

One investigator found in a single edition of a daily paper no less than twenty advertisements of the bootlegger type, fifteen of which he investigated.[27] A suave female, he states, would always greet him at the door and, after he had told his mission, she would mournfully explain that she hated to part with the things, and would give such reasons as the expensiveness of getting the furniture ready and shipping it a long distance, or the presence of sickness which necessitated the breaking-up of the home and the selling of the furniture.

Another practice in selling furniture, which sometimes goes under the name of "bootlegging," is the operation of the so-called "10 per center." This individual poses as a wholesale dealer, able to sell his furniture to the public at 10 per cent above factory prices, and who, with such a promise of low prices, is able to cut into the business of the regular retailers sufficiently to arouse strong opposition on their part to his activities.

A third type of unfair retail selling is the direct and more or less secret selling of furniture to consumers by manufacturers who are also dealing with retailers.

As to the area in which the furniture retailers do their business it is to be noted that during the last decade or two there has been

[26] Issue of January 3, 1928.

[27] *Furniture Age*, June, 1927, p. 59.

a tendency for retailers in the larger centers of population to expand their sales territory. This expansion of retail trading areas in the furniture industry—and the tendency is by no means confined to the furniture trade—has been due largely to good roads and automobiles.

While comprehensive statistical data are not available to show precisely the extent to which such a shift has taken place, the

TABLE VIII

NUMBER OF FURNITURE STORES IN TOWNS OF VARIOUS SIZES IN NEBRASKA, 1917 AND 1925*

Size of Town	1917	1925
Under 100	.....	.....
100–300	15	9
300–500	23	20
500–1,000	31	21
1,000–5,000	38	48
5,000–10,000	11	16
Hastings (11,647)	2	4
Lincoln (54,948)	11	20

* University of Nebraska, Nebraska Studies in Business, No. 18, *The Influence of Automobiles and Good Roads on Retail Trade Centers*, p. 32.

figures in the next table are at least suggestive. These figures relate to the number of furniture stores in towns of various sizes in Nebraska for the years 1917 and 1925, and as far as this territory is taken into account there seems to have been a marked movement of the furniture trade from the smaller to the larger centers. It will be seen that the number of stores in towns with a population of less than 1,000 decreased, while the number in the towns with more than 1,000 population increased.

C. E. DANKERT

SOME EFFECTS ON WHEAT MARKETING OF CHANGES IN PRODUCTION AND HARVESTING METHODS IN THE SOUTHWEST

CHANGES in methods of producing and harvesting wheat have had at least eight important effects on wheat marketing in the Southwest.

1. Better production methods are resulting in a decline in crop risk[1] and an increase in acreage in western Kansas which more than offsets decreasing acreage in the eastern part of the state. As a result, Kansas produces a larger proportion of the total United States winter-wheat crop than formerly, and the Kansas crop has thus become a relatively more important source of early season supply.

2. There has been a decided change in the proportion of the Kansas crop grown in certain western and southwestern counties which are most distant from the Kansas City market.

3. In spite of post-war price recessions, the opportunity afforded for large-scale operations with improved types of machinery has caused a general upward trend in Kansas wheat production since 1924.

4. The relocation of producing areas has produced a considerable area in the state where in most years the wheat crop exceeds the total farm and local storage space available.

5. Because of the situation just described, there is a localized pressure on car supply and train movement and an incentive to consider local storage possibilities. This is bringing into relief the question of local versus terminal or subterminal storage for such areas.

6. Because of the earlier harvesting and threshing introduced by the combine-harvester, the percentage of the Kansas wheat crop received at Kansas City in July for inspection, grading, and sale has increased.

[1] *Types of Farming in Kansas.* Bulletin 251, Agricultural Experiment Station, Kansas State Agricultural College, Manhattan, Kansas, August, 1930, pp. 30 and 46.

7. With the introduction of the "combine" the problem of handling high-moisture wheat without allowing the quality of the grain to suffer has become more acute.

8. The importance of the Kansas wheat crop as a price factor during the July-to-September period is notably greater than it was prior to 1920.

The growing relative importance of Kansas production.—In each of the last five years, including 1930, Kansas has produced 20 per cent or more of the winter-wheat crop. In the previous five-year period this occurred only twice, in 1921 and 1924. Likewise, in the five years 1916–20, inclusive, and in the five years 1911–15, inclusive, there were only two years in each period when Kansas production was as much as 20 per cent of the total winter-wheat crop. Percentage ranges for Kansas production relative to the total crop are: from 11.8 per cent to 26.5 per cent in the 1911–15 period; from 10.2 per cent to 23.1 per cent in the 1916–20 period; from 13.3 per cent to 26 per cent in the 1921–25 period; and from 20.2 per cent to 31 per cent in the 1926–30 period.

Growing importance of southwestern Kansas production.—Since the war, fourteen[2] southwestern Kansas counties in or bordering on the Dodge City trade territory have been the center of an important expansion in wheat production. Between 1920 and 1925, inclusive, these fourteen counties produced as much as 13 per cent of the Kansas wheat crop only once—in 1924. From 1926 to 1930, inclusive, these counties produced more than 13 per cent of the Kansas crop in four of the five years, the single exception being 1927, when the southwestern crop was very poor. In the period 1920–25, inclusive, production in the fourteen counties ranged from 1.3 per cent of the Kansas crop in 1923 to 13 per cent in 1924. In the period 1926–30, inclusive, their percentage of the state's production ranged from 5.4 per cent in 1927 to 24.7 per cent in 1929. In the rapid development of wheat production in this area, the problems of storage and transportation are intensified by the distance of these counties from the Kansas City market.

[2] Clark, Finney, Ford, Grant, Gray, Hamilton, Kearney, Meade, Morton, Seward, Stanton, Stevens, Hodgman, and Haskell.

These fourteen southwestern Kansas counties produced 117 million bushels of wheat in the last five years, as against 50 million bushels in the previous five years. Eight[3] counties in the northwest corner of the state, on the other hand, produced 54 million bushels of wheat in the last five years, as against 53 million bushels in the previous five years. Nine[4] central-western Kansas counties produced 41 million bushels of wheat in the last five years, as compared with 24 million bushels the previous five years.

General trend of wheat production in Kansas.—A three-year moving average shows Kansas wheat production tending downward from 1920 to 1924, and upward since 1924. During the last five years Kansas production has totaled 181 million bushels more than during the previous five years; 46½ per cent of this increase is accounted for by the increased production in 23 central western and southwestern counties, of a total of 105 counties in the state.

Relocation of heavy producing areas and shortage of storage space.—Because the state's expanding wheat production is concentrated in a relatively few counties, and because the expansion has taken place largely in new sod-land areas, local shortage of storage space has developed in spite of the fact that total storage space in the state is ample to handle the largest of Kansas crops.

In 1924, wheat in 30 western and southwestern Kansas counties exceeded total storage space available in the counties—including farm storage space plus local station storage space—by about 15 million bushels. In 1926, in approximately the same area, wheat in 26 counties exceeded storage space by about 22 million bushels. In 1928, in 33 counties the excess of wheat over storage space was 29 million bushels. In spite of increased construction of storage space in this surplus wheat-producing area, the 1929 and 1930 crops without doubt exceeded storage space to the extent of 25–30 million bushels.

Local storage versus terminal or sub-terminal storage.—In the southwestern counties in particular there was extensive building

[3] Cheyenne, Decatur, Graham, Norton, Rawlins, Sheridan, Sherman, and Thomas.

[4] Gove, Greeley, Lane, Logan, Ness, Scott, Trego, Wallace, and Wichita.

of additional local station storage space the past year, in addition to that constructed on farms. A record of local station storage space in July, 1930, showed in 9 counties 2⅔ million bushels more than for July, 1929. Gray County alone added ⅔ million bushels to its local storage capacity. Copeland, a small town in Gray County, alone has 705,000 bushels of storage space. The largest additions by counties are shown in Table I.

TABLE I

SHOWING THE LARGEST INCREASES IN LOCAL ELEVATOR STORAGE SPACE FROM JULY, 1929, TO JULY, 1930, IN COUNTIES WITHOUT LARGE CITIES

COUNTY	LOCAL ELEVATOR CAPACITY		INCREASE
	1929	1930	
Harper	686,000	798,500	112,500
Dickinson	1,414,000	1,665,500	251,500
Ford	1,132,500	1,671,000	538,500
Gray	381,000	1,036,000	655,000
Lane	157,000	297,000	140,000
McPherson	1,088,000	1,340,000	252,000
Meade	536,000	856,000	320,000
Rice	997,600	1,223,100	225,500
Stanton	46,000	223,000	177,000
Total	6,438,100	9,110,100	2,672,000

Distance from terminals, a relatively small supply of farm storage space in the western third of the state, and cash future spreads, in recent years favorable to the storage business, have stimulated interest in local station storage. For a number of years cash wheat at harvest time was as high as or higher than the current active future. However, 1924, 1928, 1929, and 1930 were marked by local cash prices sufficiently under the current active future to give a carrying charge.

The proportionate increase in July receipts at Kansas City.—The combination of factors causing wheat to be sold at harvest has no doubt operated even more powerfully with the growing use of the "combine" and the 100,000-pound-capacity grain car. The "combine," through widespread use, furnished the grain earlier; the larger car, with more efficient train service, has put into market channels a larger portion of the grain during July.

In July, August, and September, 1922, the wheat received at Kansas City was about 20 per cent of the estimated Kansas crop. This grain was principally from Kansas, Oklahoma, Texas, Colorado, and other western states, with by far the greater portion from Kansas. In the same three months of 1929, the wheat received at Kansas City was 36 per cent of the Kansas crop.

From the crop year 1921–22 to that of 1929–30, inclusive, total car-lot receipts of wheat at Kansas City in July have increased in percentage as follows: 1921–22, 19.7 per cent of total receipts; 1922–23, 14.4 per cent; 1923–24, 14.76 per cent; 1924–25, 22.01 per cent; 1925–26, 20.37 per cent; 1926–27, 33.22 per cent; 1927–28, 23.62 per cent; 1928–29, 33.8 per cent; and 1929–30, 38.5 per cent.

This increase from around 21 per cent in 1921 to 38 per cent in 1929 shows the growing tendency for the farmer to liquidate as soon as possible; the "combine" makes this liquidation possible two to three months sooner than formerly.

Changes in the July proportion of the July-to-September receipts mentioned above reveal a striking effect of recent improvements in harvesting. In July, 1922 and 1923, only about 34 per cent, or one-third, of the receipts for the three-month period came in July; in contrast, 57 per cent of total receipts for the three-month period were received in July, 1928, and 64 per cent in July, 1929. In the last two years, almost two-thirds of the wheat for the three-month period after harvest was received in one month —July. A continuation of this trend for another year or two will certainly tax to the limit all the available storage space and marketing machinery at the Kansas City market (see Fig. 1).

In 1922 and 1923, a weekly car-lot movement of 3,000 cars by the middle of August was considered dumping on the part of producers. Since 1928 a weekly car-lot movement of 8,000 cars the last week of July is a reasonable expectation. July receipts have increased more rapidly, in proportion to the July-to-September receipts, than the July-to-September receipts have in proportion to the yearly receipts (see Fig. 1). Apparently improved harvesting and marketing methods have changed the attitude of producers toward holding and storing. The chance of saving a han-

dling cost prompts more to sell in the early three-month period. Most of those who sell in this period probably sell in July; this

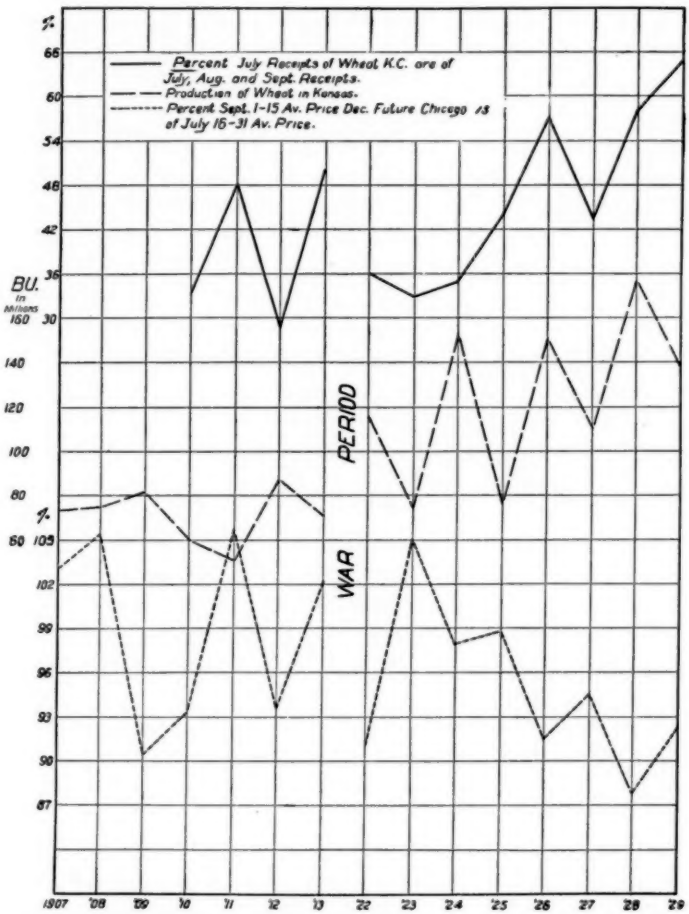
Percent July Receipts of Wheat K.C. are of July, Aug. and Sept. Receipts.
Production of Wheat in Kansas.
Percent Sept. 1-15 Av. Price Dec. Future Chicago is of July 16-31 Av. Price.
BU. In Millions
PERIOD
WAR
1907 '08 '09 '10 '11 '12 '13 '22 '23 '24 '25 '26 '27 '28 '29

FIG. 1.—The relation of size of Kansas wheat crop and early movement to price during the July–September period, 1907–29.

tends to throw more of the increase in the first weeks of the heavy marketing period.

Before the war there was a tendency for Kansas City July receipts to be less than a big crop would indicate and to be larger than a small crop would indicate. July receipts formed an average proportion of the July-to-September receipts of about 38 per cent. In large Kansas crops there was a tendency for July receipts to drop below this 38 per cent proportion; in small crops, July receipts tended to be greater than the 38 per cent proportion. At that time, wheat production was more in the hands of producers of the old type. Of a certain number of producers, a given proportion sold every year at harvest a certain amount of wheat. If it was a producer's practice to sell 1,000 bushels at harvest, he sold that quantity, regardless of whether he raised twice or three times as much. Since the war the tendency each year has been to sell a larger portion of the total quantity produced, regardless of what that total might be. The producer of the new type—the specialized wheat-grower—is probably the one who sells at harvest all he produces rather than a fixed amount such as the old-type producer sold; declining price trends since 1924 have made such procedure profitable.

High-moisture wheat.—Along with other problems, early harvesting with the "combine" brought that of handling wheat with considerable moisture. Wheat with a moisture content of more than 14–14.5 per cent is very likely to heat in ordinary farm storage. As first cuttings frequently run this high in percentage of moisture, the producer's desire to avoid heating of the wheat encourages dumping early "combine" wheat onto the local elevator. In the elevator the wheat will heat unless it is frequently moved or is shipped out soon after purchase. This possibility leads the local elevator man to hurry the wheat along on the road to the terminal.

In certain years when the supply of high-moisture grain is large, this tendency to push receipts rather urgently has resulted in heavier local discounts than would have otherwise prevailed. Important as this factor has been, an improvement in the "combine" has already partly taken care of the problem. The windrower and pickup attachment allows the grain to be cut in wind-

rows and dried there, to be picked up later and run through the "combine" and threshed.

Importance of Kansas crop as a price-making factor.—During the period for which records are available there has been a tendency for the Kansas crop, along with all other factors, to affect the Chicago price for two or three months after harvest. Only for the last seven years could the Kansas crop almost alone be used to determine price changes for such a period.

Reference to Figure 1 reveals two relationships, the first of which is the inverse secular relation of the size of the crop to the price. As the Kansas crop has increased from 100 million average to 150 million average in seven years, the July-to-September change in price at Chicago has gone from an average of no change to an average of minus 10 per cent change for recent years. This is due partly, of course, to the concurrent increase in size of the Kansas crop and of crops in other important producing regions of the world.

The second relationship is the effect of the yearly crop change above or below the secular normal production and the inverse effect on price declines above or below normal. The authors were cognizant of the relationship prior to 1930 but felt that the operation of other factors would probably result in a change in the secular price decline. But since the relation of the Kansas crop to the price change continued for 1930, there is added reason for believing in the growing importance of the Kansas crop as a price-making influence in the July-to-September period. Is there a near limit to the effect the "combine" and early marketing of the Kansas crop will have on price? Is harvesting by "combine" past the stage of excessive additions to the number of "combines," and increased efficiency for each "combine"? Will the entrance of Russian wheat into the world's markets change this early season price relationship? These are prospective changes near-by that cannot yet be fully appraised.

R. M. GREEN
H. J. HENNEY

NATIONAL BANKS IN THE SAVINGS DEPOSITS FIELD

ONE of the most notable developments of the past few years has been the extent to which national banks have entered the savings deposits field. For a long time these banks as a group have been considered as commercial banks par excellence. They have been commonly thought of as those institutions which catered almost exclusively to the business man's account; their deposits have thus been thought of as demand liabilities and their earning assets for the most part in the form of short term loans, a considerable portion of which were on call paper. State-chartered banks, on the other hand, including the typical "state" banks functioning in both commercial and savings capacity, mutual savings banks, and stock savings banks, as a group, have long been considered as our savings depositaries.

Individual deposits fall conveniently into two classes, demand and time. Strictly savings deposits compose a portion of the latter.

It has been only since 1910 that any classification of individual deposits of the national banks has been regularly published. The National Bank Act was silent as to time deposits; for some time, however, before the Reserve Act of 1913 national banks were coming increasingly to accept time deposits in one form or another. And now and then the Comptroller of the Currency was called upon for definition and determination of practice. The Federal Reserve Act definitely acknowledged time deposits; first, in Section 19, setting forth reserve requirements, time deposits were defined as comprising all deposits payable after thirty days. Again, Section 24 provided that "any such bank [other than one located in a central reserve city] may make such loans [on real estate] in an aggregate sum equal to 25 per cent of its capital and surplus or to one-third of its time deposits, and such banks may continue hereafter as heretofore to receive time deposits and to pay interest on the same."

In his annual report for 1910 the Comptroller of the Currency pointed out, "Prior to March 29, 1910, while the individual deposits were classified in the reports made by the banks, the details were not incorporated in the abstracts."[1] However, the treasury official indicated,

> Beginning with the call of November 27, 1908, an effort was made to ascertain the extent to which so-called "savings deposits" are held by national banks, in view of the fact that a number of associations conduct savings departments and others carry deposits classed as "savings accounts," although not in a special department. It further appears that in savings deposits are included both time and demand certificates. The question as to what should be reported as savings deposits has been the occasion of considerable correspondence, but the conclusion was reached that it was a question to be determined by the bank upon the advice that "all deposits accepted with the understanding between the officers of the bank and the depositors that they were savings deposits" should be so reported.

It was not until the McFadden Banking Act of 1927 that the twofold aspect of time deposits—savings and commercial—was recognized in a law for national banks. This Act provided that a national bank might extend its real estate loans to an amount equal to one-half of its *savings* deposits instead of to one-third of its *time* deposits as theretofore. Thus only strictly savings and not commercial time deposits might be used as advances on real estate.

It is the purpose in the following to trace the relative position of time and demand deposits[2] in the case of the national banks through the past decade—from 1920 to the present—and in that of banks other than national for the three years from 1927 through 1929; and further, to show as far as possible the position of deposits evidenced by savings pass books. True savings deposits consist of gradual accumulations of the unspent income of individuals. They may properly be regarded as thrift accounts.

[1] *1910 Annual Report of the Comptroller of the Currency*, p. 7.

[2] Demand deposits comprise the following: individual deposits subject to check, certificates of deposit due in less than thirty days, state or other municipal deposits, deposits subject to notice of less than thirty days, dividends unpaid, and other demand deposits. In time deposits are included savings deposits, state and other municipal deposits, other time deposits, and postal savings deposits. Thus demand and time deposits comprise individual deposits as distinct from bankers' deposits, that is, "due to banks."

In view of the data available there are two approaches which may be made to a study of savings deposits: one is through time deposits, and the other is by way of deposits represented by savings pass books. The former include all savings deposits but in addition comprise time certificates of deposit which may represent not true savings but commercial deposits subject to a notice of thirty days before withdrawal. All deposits evidenced by savings pass books may be said to be strictly savings, but these do not include those true savings which may be represented by time certificates of deposit. Thus while neither of these classes of deposits tells completely the story with regard to savings, certain tendencies in savings deposits may be gained from an observation of both of these types of deposits.

The nationals as a group showed an expansion of time deposits from not quite 3,486 millions at the middle of 1920 to practically 8,753 millions by June 30, 1930. This was an increase of 151 per cent. Demand deposits, on the other hand, expanded somewhat until 1928—a rise of 8 per cent—then followed first a decline and then a slight rise which brought these deposits by the middle of last year (1930) to a figure practically on a level with that of 1927. On June 30, 1920, time deposits of the national banks comprised approximately one-quarter of their individual deposits; by 1925 the position of these deposits had increased to 36.2 per cent, and by the middle of 1930, to as much as 44.5 per cent (Table I). When mid-year figures were considered, every year during the past decade showed an increase in the relative position of time deposits over the previous year.

Country banks normally show a much larger proportion of time deposits than those in the larger cities. This is shown clearly in the accompanying table. But the gain in the percentages of time deposits to total deposits was much more marked in the case of the city banks. The New York and Chicago institutions, for example, showed the relative position of these deposits in the summer of 1930 subject to notice before withdrawal to be almost 3.5 times that of 1920; and banks in other reserve cities, 2.5 times that of 1920.[3]

[3] Until July 1, 1922, St. Louis was a central reserve city and its bank data were included with those of the New York and Chicago banks.

A more moderate increase took place in the case of the country banks. These institutions, as of the second date of call in 1930 showed in excess of 54 per cent of all their individual deposits to be time deposits, compared with 22.5 per cent and 43 per cent, respectively, for the banks in the central reserve and other reserve cities. During the decade under study time deposits reported by the New York and Chicago banks expanded four and one-half times; the highest figure reached before the middle of

TABLE I

PERCENTAGES OF TIME DEPOSITS TO TOTAL INDIVIDUAL DEPOSITS; NATIONAL BANKS, JUNE 30, EACH YEAR*

Year	Central Reserve City Banks	Other Reserve City Banks	Country Banks	All National Banks
1920	6.5	16.8	37.4	25.4
1921	6.5	20.8	43.1	29.8
1922	11.4	21.8	44.0	31.0
1923	11.7	24.1	45.8	33.9
1924	11.0	27.1	48.3	35.4
1925	12.8	28.8	48.7	36.2
1926	12.8	29.8	49.4	36.9
1927	15.5	36.7	51.2	40.1
1928	20.2	40.5	53.2	43.0
1929	18.3	41.8	53.9	44.2
1930	22.5	43.0	54.5	44.5

* Source of data used in this and the following tables: Reports of the Comptroller of the Currency.

1930 occurred in 1928 when these banks showed 728¼ millions in time deposits; then followed a marked decline in 1929 with a partial recovery by the spring of 1930, and an expansion of almost 162 millions by the next date of call, June 30.[4] Much the same movement took place in the deposits of the banks in the reserve cities outside of New York and Chicago except that no decline occurred in 1929 and that only a moderate increase took place in 1930. The country banks hold approximately three-fifths of the time deposits reported by all of the nationals.

A number of factors have contributed to the favorable showing of time deposits in national banks: first, a reserve of only 3 per cent is required against time deposits; against demand de-

[4] A large part of this increase was the result of the merger of a large New York trust company with a national bank.

posits, on the other hand, 13 per cent, 10 per cent, and 7 per cent are the legal requirements for the central reserve city, other reserve city, and country banks, respectively. Until the Federal Reserve Act of 1913 both types of deposits were subject to the same reserve requirements. This Act set forth that a legal reserve of 5 per cent be maintained against time deposits; the reduction to 3 per cent was provided for by the Amendment of 1917. As far as legal reserve requirements are concerned it has

TABLE II

PERCENTAGES OF REQUIRED RESERVES TO NET DEMAND AND TIME DEPOSITS; NATIONAL BANKS, JUNE 30, EACH YEAR

Year	Central Reserve City Banks	Other Reserve City Banks	Country Banks	All National Banks
1920	12.5	9.0	5.7	8.1
1921	12.5	8.7	5.6	7.8
1922	12.1	8.7	5.5	7.8
1923	12.1	8.5	5.5	7.5
1924	12.1	8.4	5.4	7.5
1925	11.9	8.3	5.4	7.4
1926	12.0	8.2	5.4	7.4
1927	11.7	7.8	5.3	7.3
1928	11.3	7.3	4.9	7.0
1929	11.4	7.2	4.9	6.8
1930	10.9	7.1	4.9	6.9

become considerably cheaper for banks to carry time deposits than demand deposits.[5] The net gain in favor of the former, of course, depends upon conditions which vary as between banks.

[5] The effect of the expansion of time deposits in national banks upon the required reserve ratios for aggregate deposits is to be observed in Table II. In the case of the group of the largest banks the required reserve percentage (based on net amounts on which reserve is computed, i.e., net demand deposits and time deposits) declined from 12.5 to 10.9 during the past decade. This reveals something of the accumulating time deposits in these banks. If these institutions had only demand deposits a constant required ratio of 13 per cent would have been shown instead of the declining ratios. An even more pronounced falling off is shown in the data of the national banks in the reserve cities outside New York and Chicago; and for the country banks the required reserve ratio was 4.9 per cent at the middle of 1930 compared with 5.7 per cent in 1920. Were all the deposit liabilities of these latter banks of the demand type, a reserve of 7 per cent would have been necessary. When all the nationals as a group are considered Table II indicates clearly the influence of expanding time deposits.

It is a common practice to pay interest on time deposits; this cost must be set over against low reserve requirements. If time deposits are substituted for profitable commercial deposits, losses are likely to result; that is, many checking accounts carrying good balances, with low turnover, and on which little or no interest is paid, are probably cheaper for a bank than certain classes of time deposit accounts. Relative advantages here will be revealed only by means of adequate cost analysis. Nevertheless, many banks have likely found it profitable to encourage the shifting of some deposits from the "demand" class to the "time" class.

Second, national banks generally have felt the urge to "departmentalize"—to make that added appeal to their customers that they may do all of their banking under one roof. As of June 30, 1928, 4,489 nationals out of a total of 7,691 reported that they were maintaining separate savings departments. At the middle of 1929 almost one-third of all the national banks had received authority to exercise trust powers.[6] Thus many of the Federal-chartered banks which formerly were essentially commercial banks are able to offer the "complete banking facilities" which they advertise.

Third, another factor which has undoubtedly contributed to the expansion of time deposits in national banks has been the tendency of corporations and wealthy investors to deposit their temporarily idle funds in accounts which are subject to notice before withdrawal.[7] Evidences of these deposits are usually certificates of deposit. Banks receiving deposits from this source are largely confined to the larger centers.

Since 1909, with the exception of the years from 1914 through 1920, the Comptroller of the Currency has shown in his annual reports figures covering "savings" deposits of the national banks

[6] Under the provisions of the Federal Reserve Act, which for the first time enabled national banks to perform trust functions, only those national banks are eligible to exercise trust powers which have a capital stock of at least the minimum required by the laws of the states in which they are located for competing state institutions to receive like powers. As of June 29, 1929, 30 per cent of the nationals were thus ineligible.

[7] See *Chase Economic Bulletin*, VIII, No. 2, 14–16.

together with the number of banks reporting these deposits and the number of depositors. It is not clear that during this period the banks were consistent in reporting the same kind of deposits as "savings," for example, the treasury official pointed out as of June 30, 1921, "The total amount of [savings] deposits includes approximately $296,879,000 of time certificates included on account of misinterpretation of the definition of a savings deposit."[8] As a matter of fact nothing that approached a clear-cut definition of savings deposits appears to have been given to the banks prior to June 30, 1927. Under this date the Comptroller instructed the banks as follows:

> A savings deposit (*a*) must be evidenced by a pass book, certificate of deposit, or similar form of receipt, which must be presented to the bank whenever a deposit or withdrawal is made; (*b*) it must be subject to printed regulations accepted by the depositor at the time the account was opened and under which the depositor may, at the option of the bank, be required by the bank to give not less than thirty days' notice of intended withdrawal before the withdrawal is made.

This interpretation of savings deposits, however, makes them practically coextensive with time deposits.[9]

From 1909 to 1927 "savings" deposits as reported by the nationals in all likelihood comprised very largely those deposits evidenced by savings pass books; however, because of considerable misunderstanding as to what was to be included in "savings," great significance ought not to be attached to these figures. Suffice it to say that slightly under 40 per cent of the national banks reported savings deposits in 1910; by the middle of 1921 approximately 70 per cent of the banks indicated that they were receiving savings accounts. From 1921 to 1927 each year showed an increase in the number of nationals reporting savings deposits until by June 30, 1928, 84 per cent were receiving this type of deposit.[10] These reported savings deposits expanded from 2,958 millions, June 30, 1921, to 5,876 millions six years later.

[8] *1921 Report of the Comptroller of the Currency*, p. 40.

[9] This definition by the Comptroller of the Currency followed that provision in the McFadden Banking Act in which an attempt was put forth to have a distinction made between time deposits and savings deposits.

[10] The number of savings accounts reported by the national banks increased from slightly in excess of 8 millions in 1921 to more than 14¼ millions in 1927.

Since the autumn date of call in 1928 the national banks have reported deposits evidenced by savings pass books. These deposits represent what may be called strictly savings, that is, there are not included time certificates which *may* not represent savings; these deposits credited to pass books, therefore, have a significance not possessed by the "savings" deposits indicated above. However, they, of course, do not include those certificates which really do represent savings. In Table III is shown the extent to which deposits represented by savings pass books compose total time deposits for the several groups of national banks. It will be noted that during the past year and a half these deposits have ranged within narrow limits—between 69.4 per cent and 73.2 per cent of the aggregate time deposits for all of the nationals. Since the middle of 1929 the percentages have been a trifle lower. The country banks show very close to three-fourths of all their time deposits to consist of those credited to pass books; much the same situation prevails in the case of the banks in the reserve cities outside of New York and Chicago. The New York and Chicago institutions report deposits evidenced by savings pass books to comprise a significantly lower proportion of total time deposits than do the other bank groups; at no time since the autumn of 1928 have these city banks shown time deposits represented by pass books to compose as much as 47 per cent of their total time deposits, and on June 30, 1930, they comprised less than 31 per cent of the total. It will be noted from Table III that the relative position of savings-pass-book deposits reported by the large city banks fluctuates considerably more than that of the groups of smaller institutions. Banks in the central reserve cities function as commercial institutions to a greater extent than the smaller banks. Not only is a much larger proportion of their time deposits in the form of certificates of deposit than in the instance of the latter banks, but these certificates represent to a considerable degree true commercial accounts and not strictly savings. It is interesting to observe that as of the above-mentioned date almost one-third of the aggregate individual deposits (demand and time) of the nationals as a whole consisted of deposits evidenced by savings pass books.

These latter deposits represented almost 16 millions of individual accounts.

The deposits reported by banks other than national do not permit of so accurate an analysis except for the three years 1927 to 1929.[11] Until the former year these banks so reported their deposits as to leave a large portion of them unclassified. Hence

TABLE III

PERCENTAGES OF DEPOSITS EVIDENCED BY SAVINGS PASS BOOKS TO TOTAL TIME DEPOSITS; NATIONAL BANKS, DATES OF CALL

Date of Call	Central Reserve City Banks	Other Reserve City Banks	Country Banks	All National Banks
October 3, 1928.....	41.4	75.2	73.9	71.5
December 31, 1928.....	40.3	75.4	74.9	72.0
March 27, 1929.....	42.4	76.0	74.3	72.5
June 29, 1929.....	46.2	76.8	74.3	73.2
October 4, 1929.....	40.3	76.5	73.8	72.0
December 31, 1929.....	37.1	72.7	75.1	71.4
March 27, 1930.....	36.6	73.3	74.4	70.9
June 30, 1930.....	30.9	72.5	74.1	69.4

TABLE IV

TIME DEPOSITS HELD BY THE VARIOUS GROUPS OF BANKS OTHER THAN NATIONAL, JUNE 30, EACH YEAR

(000,000 Omitted)

Year	Total	State (Commercial)	Mutual Savings	Stock Savings	Loan and Trust Companies	Private Banks
1927.....	$19,066	$6,111	$8,055	$1,456	$3,391	$53
1928.....	20,242	6,229	8,666	1,346	3,958	43
1929.....	20,471	6,299	8,903	1,230	3,990	49

it is impossible to segregate total individual deposits into the two groups, demand and time, for the years previous to 1927. Table IV shows the time deposits as reported by the several classes of banks other than national for the entire country as of June 30, 1927, 1928, and 1929. At these dates time deposits constituted

[11] For a number of years the Comptroller of the Currency has shown in his annual reports a summary condition of all banks other than national as reported to him by state banking departments. Data covering these banks are usually as of June 30, each year.

59.6 per cent, 60.3 per cent, and 59.7 per cent of the aggregate individual deposits of these banks as compared with 40.1 per cent, 43 per cent, and 44.2 per cent, respectively, in the case of the national banks (Table V). The latter banks thus show a gain in 1928 and 1929 not evidenced by those other than national.

When the non-classified deposits of the banks other than national are included with their reported time deposits, it is found that this total as of June 30, 1920, comprised slightly in excess of 70 per cent of total individual deposits; by 1924 these deposits were 76 per cent of the aggregate; then a decline followed for the

TABLE V

PERCENTAGES OF TIME DEPOSITS TO TOTAL INDIVIDUAL DEPOSITS; NATIONAL BANKS AND ALL BANKS OTHER THAN NATIONAL, JUNE 30, EACH YEAR

Year	National Banks	Banks Other than National
1927.....	40.1	59.6
1928.....	43.0	60.3
1929.....	44.2	59.7

next two years. By the middle of 1926 not more than 72.2 per cent of the aggregate individual deposits of these banks consisted of time deposits and non-classified deposits together. For the state banks, it is very doubtful if time deposits alone, relative to total deposits, much more than held their own during the past decade. As was pointed out above, the time deposits of national banks expanded from 25.4 per cent of their aggregate individual deposits in 1920 to 45.6 per cent in 1930.[12]

While time deposits relative to demand deposits reported by the national banks have increased markedly compared with those of the other banks, the former institutions still hold a relatively small portion of the time deposits of all the banks in the entire country—27.7 per cent of the total at the middle of 1927

[12] It is important to note that there are quite a number of national banks, chiefly in the larger cities, having as affiliated institutions state-chartered banks which function virtually as trust and savings departments of the nationals. Were the savings deposits of these banks included with the national bank figures, the deposits of the latter would be considerably increased.

and 28.9 per cent two years later (Table VI). As of the latter date the nationals held 43.1 per cent of all the demand deposits.

To summarize: in recent years a very marked increase has taken place in the time deposits of national banks. This expansion has been both absolute and relative to the aggregate individual deposits of these banks. The large city banks—those in New York and Chicago—showed the largest increase in the relative position of time deposits since 1920 of the three national bank groups; as of the summer date of call in 1930, approximately 23 per cent of all their individual deposits were time deposits

TABLE VI

TIME AND DEMAND DEPOSITS HELD BY NATIONAL BANKS AND BANKS OTHER THAN NATIONAL, JUNE 30, EACH YEAR

(000,000 Omitted)

YEAR	TIME DEPOSITS				DEMAND DEPOSITS			
	Total	National Banks	Banks Other than National	Percentage Held by Nationals	Total	National Banks	Banks Other than National	Percentage Held by Nationals
1927.....	$26,382	$7,316	$19,066	27.7	$23,855	$10,924	$12,931	45.8
1928.....	28,539	8,297	20,242	29.1	24,311	11,004	13,303	45.3
1929.....	28,788	8,317	20,471	28.9	24,350	10,504	13,846	43.1

compared with less than 7 per cent in 1920. The country banks at present show almost 55 per cent of their deposits to be time deposits; and all the nationals as a group, nearly 45 per cent.

Contributing factors to the favorable showing of time deposits in national banks are the relatively low reserve requirements of these deposits; the desire of the banks to offer complete departmentalized services; and a tendency for individuals and corporations to place their temporarily unused funds in this type of deposit.

During the past decade, in which this marked expansion in time deposits of the national banks took place, it appears that practically no change occurred in the position of time deposits relative to aggregate deposits in banks other than national. While these other institutions still hold the major portion of the time deposits of the entire country—71 per cent at the middle of

1929—they have slowly but steadily lost ground to the national group.

A further analysis of the time deposits reported by national banks shows that those deposits evidenced by savings pass books have averaged almost 72 per cent of the total time deposits since the autumn of 1928. When time certificates of deposit which represent strictly savings are estimated and considered along with deposits credited in savings pass books, one is probably not far wrong in estimating that at the present time in excess of four-fifths of the time deposits reported by the national banks represent the accumulation of savings.

With the expanding position of savings deposits and the quite inevitable change which follows in the type of earning assets, national banking practice appears to have departed considerably from traditional paths.

DON M. DAILEY

SOME ECONOMIC ASPECTS OF THE WESTERN MEAT-PACKING INDUSTRY, 1830–60

WHEN western avenues of transportation for surplus produce were confined to indifferent roads, unruly rivers, and a few canals, a premium was placed on those forms of farmers' produce—beef cattle and swine—which could furnish their own transportation either to some point on a navigable river or canal or to the ultimate market. The superior traveling powers of beef cattle and the inferior preserving qualities of their meat determined that, until the trans-Allegheny railroads should appear, most of them would reach the eastern market "on the hoof," and comparatively few would be salted and packed in the West. Exactly the opposite qualities determined that most of the swine should be driven only a short distance to a packing-point on some river or canal in the West, there to be turned into pickled, or smoked and salted, pork, bacon, and ham. As a result the western meat-packing industry of 1830 to 1860 was practically a pork-packing industry, with beef-packing hardly more than a minor adjunct.

The purpose of this paper will be to describe the economic machinery of the early western packing industry, the factors in its distribution throughout the West, and its marketing and general economic problems during the period 1830 to 1860.

The packing industry had already attained considerable proportion before 1830. During the packing season 1822–23 in Cincinnati, there were eleven merchants packing from 130 to 2,150 hogs, with a grand total of 15,127.[1] During the season 1830–31 there were slaughtered at Cincinnati and along the line of the Miami Canal 150,000 hogs.[2] During the early period, figures on imports into New Orleans from the interior are a good index as to packing growth. In 1823 approximately 28,900 barrels of

[1] Cincinnati, *Liberty Hall*, January 21, 1823, p. 3.

[2] *The Cincinnati Directory Advertiser, for 1831* (Cincinnati, 1831), p. 200.

pork of 200 pounds each were imported from up the Mississippi River; while in the fiscal year 1830–31 the figures for the first time jumped above the one hundred thousand mark to 104,000 barrels.[3] Though the date 1830 was chosen mainly because of the availability of continuous data from that time onward, it still represents a point at which the packing industry had attained an appreciable growth.

The packing season during the period under consideration was almost exclusively confined to the late autumn and winter months, chiefly December and January. Natural refrigeration, thereby secured, made up for the lack of facilities for artificial refrigeration. This shortness of the packing season tended to heighten the speculative character of the industry. The technical processes differed from those of the modern industry, in that all the meat was treated with some chemical preservative, dry salt, wood smoke, or a pickle made up mostly of dissolved common salt, and a little saltpeter—one pound of salt for every four pounds of meat being the usual formula.[4] By 1837 the process of slaughtering had been so subdivided and systematized that one slaughtering establishment in Cincinnati had reduced the

[3] *Report on the Internal Commerce of the United States, 1887*, House Exec. Doc., 50th Cong., 1st Sess., No. 6, Pt. 2, Vol. XX, pp. 195–96, 200–201. Up to 1847–48 figures on imports into New Orleans, as given here, have a possible inaccuracy of 5–10 per cent, and for 1847–48 to 1860 of 15–20 per cent, though practically always the possibilities are for greater rather than smaller figures. The inaccuracy is due to the fact that the figures are given in four or five different container sizes; evidence is contradictory as to the size of certain of these containers; while in certain cases, figures on two or more containers are grouped together in the figures. The ratios used here are: barrels, 200 pounds; tierces, 304 pounds; boxes, 400 pounds; hogsheads, 800 pounds; "barrels-tierces" of pork, 200 pounds; "barrels-boxes," 300 pounds; "casks, etc.," 700 pounds; "casks-hogsheads," 700 pounds. *Cincinnati Gazette*, January 15, 1844, p. 3; *ibid.*, November 20, 1856, p. 1 (chief reliance); *Prairie Farmer*, X (December, 1850), 382; C. Cist, *Sketches and Statistics of Cincinnati in 1851* (Cincinnati, 1851), p. 282; *Annual Reports of the Cincinnati Chamber of Commerce, 1847—;* especially report of 1849–50, p. 5; and others.

[4] The state law usually provided the amount of salt to be used, and the various qualities of meats and kinds of cuts that were to be mixed in to make up the three or more grades of pork. *Acts of . . . . the First Session of the Twenty-Second General Assembly of . . . . Ohio, ... Dec. 1, 1823* (Columbus, 1824), XXII, 354.

time to kill and dress one hog to a single minute, and could handle some eight hundred hogs a day at each of its ten houses.[5]

The speculative character of the packing industry, and the small amount of capital required for the packing plant itself, caused the economic problems of packing to greatly overshadow the technical problems, so that the newspaper items more often referred to it as the "provisions trade" rather than the "packing industry."[6] The industry up to 1860 was usually conducted by commission merchants, who, outside of the packing season, might engage in a general commission business, though perhaps specializing in provisions. Hugh and James Glenn of Cincinnati in September, 1818, advertised that they would pay cash for "good merchantable Pork," but that they had on hand dry goods, groceries, and hardware which they would exchange for the same.[7] Over thirty years later, practically all of the packers advertising in the *Cincinnati Directory* of 1850–51 styled themselves as both packers and commission merchants.[8]

The packers sought their profits from two sources: packing on commission for others, and profits from packing on their own account. J. Prince, Jr., of Cincinnati, in December, 1819, advertised that, while he would pay cash for "Corn fed Hogs," he would "also cut, pack and tryout the lard of any quantity of Pork on reasonable terms."[9]

The business of packing for farmers or drovers tended to become much less important in later years. The greater amounts of capital and better facilities for selling possessed by the commission merchants, both western and eastern, gave them a decided

[5] *New England Farmer*, 1822–46; XV (February 1, 1837), 234.

[6] In 1858 the eleven packers of Chicago had from $3,000 to $45,000 invested in their plants, with an average of $14,700. *Annual Review of the Commerce, Manufacture . . . . of Chicago*, 1854–60; review of 1858, p. 21.

[7] Cincinnati, *Liberty Hall*, September 29, p. 3. See also advertisement of G. V. H. De Witt in same issue, and advertisements of Barr, Patterson and Smith, *ibid.*, November 21, 1821, p. 3.

[8] *Williams' Cincinnati Directory and Business Advertiser, 1850–51;* especially pp. 109, 120, 183. Also *Robinson and Jones' Cincinnati Directory, 1840*, p. 523.

[9] *Liberty Hall and Cincinnati Gazette*, December 14, 1819, p. 4. See advertisement of Dudley Andrews–John Shay, *ibid.*, November 25, 1820, p. 3, and of Mordecai W. Smith, *ibid.*, November 24, 1821, p. 2.

advantage. However, farmers and drovers continued to pack on their own account all through the period on occasions of dissatisfaction with the prices offered by the packers. Due to this cause, in the Novembers and early Decembers of 1844, 1849, 1856, and 1857 it was reported that most of the packing was being done for drovers and farmers on the latters' account at Cincinnati and Louisville.[10] In particular in December, 1857, the farmers were dissatisfied with what were, as a matter of fact, rather high prices compared with what they had been getting only a few years before. It was reported that the farmers of Posey and Gibson counties, Indiana, were clubbing together to pack and ship on their joint account.[11]

Packing on commission might not only be done for farmers and drovers, but was more often done for other western commission merchants or speculators, or for eastern dealers. There was a class of merchants and speculators in the West who, while operating no packing plants, were willing to engage in speculations in pork. During the 1858–59 packing season, the most notable speculative season before the Civil War, they were especially active in Cincinnati. The *Annual Report of the Cincinnati Chamber of Commerce* for 1858–59 describes their activities:

> The market was full of outside operators from other points, and the largest quantity of Pork ever packed on Commission in this city was packed last season. The operations of parties from Indiana and Kentucky, were, in many cases, on a large scale, but our city packers, as a general thing, having no faith in the current prices, preferred packing upon other than their own account. Eastern dealers, with the exception of a few from Boston, being of the same opinion with our packers, purchased very sparingly. . . . .[12]

The drover quite frequently, perhaps most frequently, was an intermediary economic agent between the packer and the farmer.

[10] *Cincinnati Gazette,* November 21, 1844, cited by *Baltimore American,* November 26, p. 2; *Baltimore American,* December 1, 1856, p. 1, article from Louisville, Kentucky; *New York Shipping and Commercial List,* December 12, 1857, p. 395, article from *Cincinnati Price Current.*

[11] *Evansville Journal,* December 5, cited by *Cincinnati Gazette,* December 7, p. 3.

[12] P. 28. See also John Ashton, *A History of Hogs and Pork Production in Missouri,* monthly bulletin of Missouri State Board of Agriculture, XX (January, 1923), No. 1, 58–59. *New York Shipping and Commercial List,* March 11, 1843, p. 79, Cincinnati date line.

Little direct evidence has been found disclosing exactly what this relationship was. However, the numerous instances in which Cincinnati and Louisville papers refer to drovers "packing on their own account," indicate that, very often, they were the owners of the hogs they brought to market.[13] They probably also often acted merely as agents of the farmers.

The practice on the part of the packers and speculators of contracting with the farmer long in advance for his hogs was prevalent throughout the period. As early as 1825 in Cincinnati, packers sent out their agents to secure contracts in seasons of brisk competition.[14] In practically all seasons, most packers would contract for a small portion of their prospective pack for early delivery in November, so that they might get their pork down the Mississippi River to an early market.[15] But the practice of contracting in advance was most prevalent when "short crop-high prices" seasons were anticipated, bringing vigorous competition between packers and packing centers for the hog supply. The 1855–56 packing season is a typical one of this kind:

> During the latter part of the summer, and the fall months of 1855, a very general impression prevailed that, in consequence of the failure of the Corn crop in 1854, and the consequent great scarcity and high price of corn during the spring and summer of 1855, Hogs had been neglected, and reports were in general circulation, and pretty generally believed, that thousands of them had been permitted to starve to death, in all sections of the country. Based upon these impressions and these reports which seemed quite plausible, to say the least of them, heavy contracts were made, beginning in August, and indeed in many cases, as early as July, for Hogs in November delivery, at prices ranging from $5.75 up to $6.50 per cwt. net, chiefly at $6 to $6.50. The Stocks of old Provisions in the hands of dealers in September of 1855 were exceedingly light, and it was correctly calculated that they would be entirely exhausted by the 1st of November, and that the first new pork brought to market would command high rates, and meet with an active demand. These calculations seemed plausible at the time, but too many were of the one

[13] See previous citations on both farmer and drover packing.

[14] *Liberty Hall and Cincinnati Gazette*, September 20, 1825, p. 3.

[15] Ashton, *op. cit.*, p. 58; *New Orleans Price Current*, October 18, 1851, from *Louisville Courier; Annual Report of the Cincinnati Chamber of Commerce, 1853–54*, p. 7; *ibid., 1855–56*, p. 14.

opinion, and all coming into market together, increased the competition for Hogs so that the prices were run up, soon after the packing season commenced, to $7 per cwt., and the general rush made to bring the stuff to market increased the quantity suddenly thrown upon the market, so that the prices declined.[16]

The packer or speculator bought directly from the drover or farmer such hogs as were brought to the market during the packing season not under contract. In Cincinnati, slaughtering was carried on by different individuals from those doing the packing. The packer, drover, or farmer first took his hogs to the slaughterer for killing and dressing. The latter charged no fee, but kept the gut lard, entrails, and bristles. In 1837 these were worth about 50 cents a hog.[17] By 1839, so valuable were these materials that the slaughterers were occasionally giving a 12½ per cent premium for the privilege of killing the hog;[18] and a dozen years later, due to the enhanced value of the offal from the development of by-products uses, 10–25 cents premium was being given as a regular practice.[19] Outside of Cincinnati more frequently the slaughtering and packing were handled by the same firm, and such premiums as a few of the larger places were able to offer were found in an enhanced total price.[20]

While the packing plant itself did not require a great outlay of capital, the hog crop did. In the 1843–44 season, the medium-sized packer who might put up 10,000 hogs on his own account would have had to make an outlay of $50,000, and one of $80,000 in the 1854–55 season.[21] The drover or farmer packing on

[16] *Annual Report of the Cincinnati Chamber of Commerce, 1855–56*, p. 14.

[17] *New England Farmer*, XV (February 1, 1837), 234.

[18] Henry W. Ellsworth, *The American Swine Breeder* (Boston, 1840), p. 292.

[19] C. Cist, *Sketches and Statistics of Cincinnati in 1851* (Cincinnati, 1851), p. 280.

[20] *Louisville Democrat*, December 28, 1846, p. 3; *ibid.*, November 1, 1848, p. 2, advertisement of Huffman, Maxcy and Shirley; *Southern Planter*, XVI (January, 1856), 5–6, article on Chicago beef-cattle slaughtering and packing.

[21] Figuring the hogs at 200 pounds net, and the average 1843–44 price at $2.50 per 100 weight, that of 1854–55 at $4.00. Prices for 1843–44 from *Cincinnati Morning Herald;* for 1854–55 from *Cincinnati Daily Enquirer.*

his own account, or selling his hogs on time, would thereby help to finance the packing.[22]

Money, however, always was scarce during the packing season, and interest rates high. The Cincinnati Chamber of Commerce report of the 1850–51 season stated:

> . . . . During our pork *packing* season, we had our usual pressure for bank notes, sight bills on the East being almost as difficult of negotiation as those having three months to run. This, however, is always the case, and only fluctuates with the increase or decrease of that important staple, pork; and, after all, only amounts to an *inconvenience*, fully compatible with a perfectly healthy state of business.[23]

The Cincinnati packers might find money shortage merely an inconvenience. Packers in smaller places often found it a more serious matter. In the early winter of 1842–43, when the West was still under a heavy depression, Lafayette, Indiana, reported that all the pork was being put up by persons from a distance or by their agents, because their own citizens had little money with which to work.[24] In 1848 an Iowa farmer complained that the lack of capital in Iowa, and the difficulty in persuading eastern capitalists to send their money so far away, had prevented the rise of a local packing industry and had forced farmers to pack their own pork.[25] A most interesting statement as to the difficulties of a small-town packer in securing funds is found in a letter of an Alexandria, Missouri, packer to his banker in St. Louis:

> We have nothing from you since the 26th and 30th, although looking more anxiously than ever. We wrote you last week by *Minnesota Belle* that we were out of funds. Have been promising drovers that as soon as the boat returned we could pay them. Some of them have been wasting two days (here). . . . . I never saw such a rush of hogs in this place. It seems that all held back after the holidays; pens all full; had to stop killing yesterday. Wagon hogs so numerous that we could not haul from slaughter house. Imagine from 50 to 100 men coming in the morning to get their money, and none for them. . . . .[26]

[22] For selling on time see *New York Shipping and Commercial List*, November 11, 1857, p. 359; *Louisville Democrat*, December 4, 1857, p. 3.

[23] *Annual Report of the Cincinnati Chamber of Commerce, 1850–51*, p. 10.

[24] *Commercial List and Philadelphia Price Current*, December 3, 1842, p. 187, item from *Lafayette* (Indiana) *Telegram*.

[25] *Farmers' Cabinet*, XII (February 15, 1848), p. 224.

[26] Ashton, *op. cit.*, p. 60, "Maxwell Papers," Maxwell to Roe, January 7, 1858.

Even the difficulties of Cincinnati packers in securing funds could be something more than "inconveniences." In the 1851–52 report of the Cincinnati Chamber of Commerce it was admitted that, due to lack of adequate banking facilities in Cincinnati, ". . . . large quantities of our great staple, ... Pork, were packed and cured in other cities, because their four and six month's bills could be negotiated with full as much readiness as those of half that length could be here."[27] In December of 1859 in Cincinnati, "first class paper was to be had in abundance at 1½ to 2 per cent. per month, and various shifts had to be made by merchants not having large capital, to obtain loans."[28] Though lacking good banking facilities, Cincinnati possessed a large amount of capital, which the merchants made available to each other by a crude system of mutual accommodation.[29]

Eastern provisions merchants probably started their annual visitations to the West to buy up pork and bacon for their own markets in the thirties. The first available reference to them appeared in 1841, saying that "many of the Boston and Richmond dealers, and those from other cities in the East and South, come here annually to have meat packed. . . . ."[30] In fact, during the 1841–42 season, they seem to have financed a good deal of the packing in Cincinnati when local funds were lacking. ". . . . The persons engaged in packing are all either Eastern merchants, or the dry goods merchants of Cincinnati, who in order to save their exchange, invest their western funds in Pork, and ship it East in payment of debts."[31]

Boston and Baltimore merchants are the most frequently mentioned, though there is some evidence, and much reason to believe, that merchants from New York, Philadelphia, Pittsburgh, Richmond, and New Orleans also frequented the West, with

[27] P. 10.

[28] *Annual Report of the Cincinnati Chamber of Commerce, 1859–60,* p. 8.

[29] *Ibid., 1855–56,* p. 23.

[30] *New England Farmer,* XX (August 18, 1841), 51. From *Western Farmer.*

[31] *New York Shipping and Commercial List,* January 8, 1842, p. 11; *ibid.,* December 18, 1841, p. 399.

Cincinnati and Louisville their chief calling-points.[32] Data are insufficient to estimate the relative importance of the financial aid these eastern merchants gave to western packing, though from their frequent mention in the newspapers they seem to have been considered quite an important factor.

The first accurate and comprehensive figures on western packing that enable us to see the distribution of packing throughout

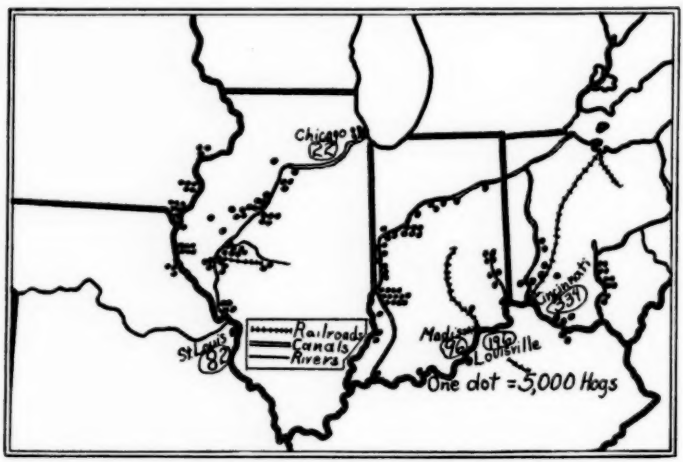

FIG. 1.—Distribution of hog-packing in the West, 1850–51 season. Based on figures in *Cincinnati Drovers' Gazette*, February 20, 1852, p. 3. Points with less than 3,500 hogs packed are combined or not shown.

the West go back to the 1843–44 season. In 1846 the *Cincinnati Gazette* sent letters to all the postmasters throughout the West asking for figures on packing in their vicinity for the previous three seasons.[33] From this time on to 1860 there are comprehensive statistics available, though the *Cincinnati Price Current* shortly assumed the burden of gathering them at the end of each

[32] *Baltimore Commercial Journal*, December 21, 1844, p. 176; *Baltimore American*, January 18, 1851, p. 3; E. T. Freedley, *Philadelphia and Its Manufactures* (Philadelphia, 1858), p. 267.

[33] *Philadelphia Commercial List and Price Current*, December 5, 1846, p. 195. From *Cincinnati Gazette*.

Dollars Per Barrel of Pork

season. These figures are admittedly not complete, but it is doubtful whether complete figures would indicate more than a 5–10 per cent increase.[34]

These figures show that for the 1843–44 season, there were over 96 packing-points doing a total pack of 1,245,000 hogs. Ohio did 51.5 per cent of the total; Indiana, 24.1 per cent; Illinois, 12.8 per cent; Kentucky, 8.5 per cent; and the rest scattered

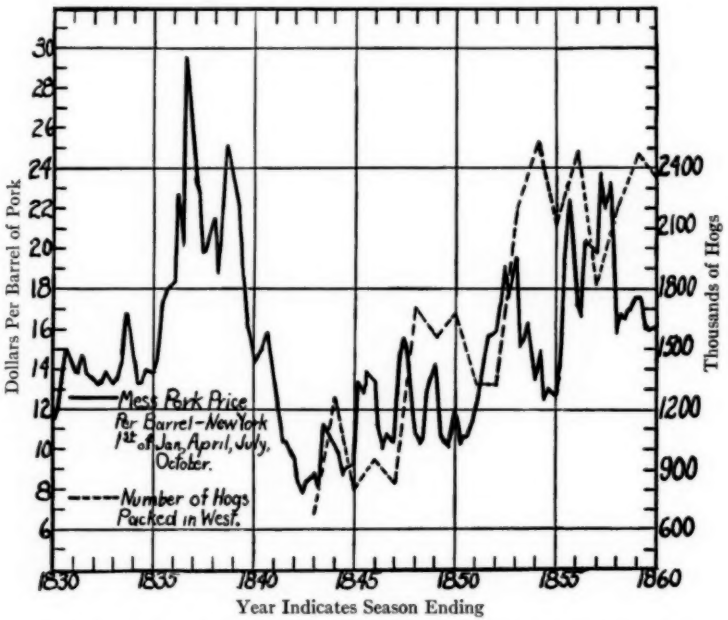

FIG. 2.—Mess pork prices per barrel, 1830–60 and number of hogs packed in West from 1842–43 season to 1859–60 season. Prices from *New York Shipping and Commercial List*, 1830–60. Taken from issue nearest first of January, April, July, and October. Number of hogs packed from C. M. Depew's *One Hundred Years of American Commerce, 1795–1895*, II, 384, for all seasons save 1851–52. For this season from *New York Shipping and Commercial List*, March 5, 1853, based on *Cincinnati Price Current*.

[34] See *Cincinnati Price Current*, March 26, 1856, p. 2. Being forced to rely, in many cases, on reprints of the *Cincinnati Price Current* figures, which often were not the final ones, I have relied for total figures on those given by Philip D. Armour in his chapter on "The Packing Industry" in C. M. Depew's *One Hundred*

among Tennessee, Missouri, and Iowa.[35] In the 1858–59 season, reports from 216 packing-points showed a total pack of 2,465,-035 hogs. Of this, Ohio packed 25.1 per cent; Indiana, 16.7 per cent; Illinois, 24 per cent; Kentucky, 16.2 per cent; Missouri, 6.6 per cent; Iowa, 6.7 per cent; Tennessee and Wisconsin packed the rest.[36] In other words, the packing center was fast moving westward to a resting-point in Illinois.

The concentration of packing by cities is also interesting. In 1843 the first two cities—Cincinnati, Ohio, and Madison, Indiana—controlled 23.9 per cent of the packing; the first five cities, including these and three others, controlled 36.6 per cent; the first ten, 46.9 per cent; and the first twenty, 59.1 per cent.[37] A fairly high degree of concentration is thus exhibited. In the 1858–59 season the first two cities—Cincinnati and Louisville—controlled 27.2 per cent of the packing; the first five, 38.9 per cent; the first ten, 48.6 per cent; and the first twenty, 62 per cent.[38] Only a slightly added degree of concentration is apparent.

The reasons for the lack of continued concentration seem to be three. First, the appearance of the railroads in the West in the early fifties gave opportunities to pack to dozens of towns which formerly had lacked good transportation facilities. Second, the appearance of new markets in the East, due to the railroads, and of new markets in Europe, brought a rapid expansion of the industry, so that the large centers had their facilities taxed

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Years of American Commerce, 1795–1895, II, 384. Mr. Armour said his figures had been compiled from the *Cincinnati Price Current*. They are in practically all instances somewhat greater than in my reprints. However, for the season 1851–52, I have taken the *New York Shipping and Commercial List* reprint (March 5, 1853), which gives 1,562,580 hogs against Armour's figures of 1,183,000, which more nearly tallies with the totals from a *Cincinnati Gazette* (February 20, 1852, p. 3) list of figures on all packing-points.

[35] See Depew, *op. cit.*, II, 384, for total figures. *Philadelphia Commercial List and Price Current*, December 5, 1846, p. 195, for state figures and for total figure as basis for percentages. This total is 1,069,062 hogs.

[36] *Cincinnati Price Current*, February 2, 1859. Total is same as given by Armour.

[37] Depew, *op. cit.*, II, 384, for totals. *Philadelphia Commercial List and Price Current*, December 5, 1846, p. 195, for figures on packing-points.

[38] Depew, *op. cit.*, II, 384, for totals. *Cincinnati Price Current*, February 2, 1859, p. 2, for figures on packing-points.

to take care of merely their normal share of the increase. Finally, the center of swine-raising was moving westward away from Cincinnati and Louisville to new centers which had lacked opportunity for development.

The map showing the distribution of packing for the 1850–51 season will sufficiently indicate the regional distribution of packing. The close relation between the packing-points and the river and canal systems of the West is quite apparent.

A glance at specimen liveweight prices for hogs given during the opening of the 1850–51 season indicates much as to the reason for Cincinnati predominance in packing.[39]

November 21		*November 28*	
Cincinnati	$3.75–$3.95	Cincinnati	$4.00–$4.08
Louisville	3.75	Louisville	3.70– 3.80
Hamilton, Ohio	3.00– 3.25	St. Louis	2.75– 3.25
Madison, Ind.	3.50	Alton, Ill.	3.00
		Frankfort, Ky.	3.00

In fact, a study of the liveweight prices of almost any season would show that Cincinnati consistently paid the highest prices, with Louisville closely following and other points having prices appreciably less.

There were various factors in Cincinnati's favor that thus allowed it to outbid its competitors. Cincinnati, with the largest population of all cities in the West before the Civil War, had, as a result, probably the largest labor population. Packers were thereby able to take quick advantage of favorable packing weather, and perhaps able to get their labor at a somewhat cheaper wage.[40] There was a large cooperage industry in the city able to supply the needs of the packers.[41] As mentioned before, capital was a prime requirement; and while Cincinnati seems to have suffered from inadequate banking facilities at times, the wealth in Cincinnati enabled the packers to get sufficient capital through other channels.

Finally, Cincinnati had a clear advantage over all of its rivals

[39] From *Cincinnati Gazette* for November, 1850.

[40] C. Cist, *Sketches and Statistics of Cincinnati in 1851*, p. 288.

[41] *Ibid.*, p. 287.

in its ability to dispose of the offal, fat, and the lard of the hog into profitable by-products. Lard is the most important and profitable by-product of packing, though the ease in rendering it probably gave Cincinnati no great advantage over its rivals. Soap, candles, and lard oil were the next three most important by-products obtained from the lower-grade lards and gut fat. Lard oil was developed around 1840. For two decades it held its place as the most efficient and cheapest illuminant and as a good machinery oil.[42] In the three products, soap, candles, and lard oil, the 1860 census represents Hamilton County, Ohio, containing Cincinnati, as turning out a product worth $3,207,273; St. Louis County, Missouri, $1,721,000; Jefferson County, Kentucky, containing Louisville, $494,409; and Cook County, Illinois, containing Chicago, $242,680.[43] Cincinnati also had secured other by-product outlets sooner than other places. By 1845 it had a manufacturing establishment which made use of hogs' bristles and curled hair.[44] There was exported from Cincinnati during the fiscal year 1854–55, $106,000 worth of this product.[45] Another establishment doing business in Cincinnati in 1845 made use of all the bones, both of beef cattle and of hogs, the large bones for button-making, whip-handles, and so forth, and the small bones for ivory black used in shoe polish.[46] In this same year there had just been started a factory for the making of Prussian blue, which made use of cattle hoofs, plucks, and the blood of hogs.[47]

The gridironing of the West with railroads during the decade 1850–60 would naturally be expected to have some influence on such an industry as packing, so dependent on transportation.[48] What this effect was is somewhat difficult to measure.

[42] *Annual Report of the Commissioner of Patents, 1841*, p. 80; *ibid., 1842*, p. 39.

[43] *1860 Census of Manufactures*, pp. 86–87, 178–79, 310–12, 453–56.

[44] *Southern Cultivator*, III (June, 1845), 90, from *Cincinnati Chronicle*.

[45] *Annual Report of the Cincinnati Chamber of Commerce, 1854–55*, p. 24.

[46] *Southern Cultivator*, III (June, 1845), 89. [47] *Ibid.*, p. 90.

[48] Frederick L. Paxson, "The Railways of the Old Northwest before the Civil War," in *Transactions of the Wisconsin Academy of Science, Arts and Letters* (Madison, 1911), Vol. XVII, Pt. I, No. 4, gives maps showing the yearly development of the railroads in the northwest from 1845 to 1860.

Cincinnati packers were particularly fearful that the trans-Allegheny railroads might drain off to the east all the western hogs before allowing them to be made into pork in the West; that, in fact, packing supremacy might pass from Cincinnati to New York City.[49] Their fears were not without some basis. In the 1852–53 season 196,733 hogs were taken by the railroads or the Erie Canal to the East. In the 1858–59 season 640,219 hogs were taken east.[50] Despite this enormous draining off of live hogs from the West, the western packing industry increased its output 41 per cent over the 1851–52 season, or from 1,562,580 hogs to 2,201,000 hogs, though thereafter the output up to 1860 was relatively constant.[51]

The fact that the packing industry was moving westward from 1843 to 1860 has been previously shown. A Cincinnati editor in 1852 pointed out to his readers that Cincinnati must philosophically accept this situation. As railways came in, the value of land was increased,

> and whenever the latter [the lands] are in this way brought near to market, Hogs have been found not generally the most profitable product. Consequently the business of raising Hogs is extending Westward, and increasing there much more rapidly than the population of those sections of the country.[52]

Cincinnati, however, maintained its supremacy, and even appreciably increased its production during the decade 1850–60, with only an occasional serious challenge from Louisville. It was only the rather meteoric rise of the Chicago packers from the 1856–57 season to the 1861–62 season that finally and permanently snatched the leadership from Cincinnati.[53] Chicago's rise can be directly traced to the immense amount of railroad-build-

[49] *Cincinnati Gazette,* March 5, 1851, p. 2; *ibid.,* October 13, 1852, p. 2.

[50] *Western Journal,* XI (March, 1854), 436, for 1852–53; *Cincinnati Price Current,* March 30, 1859, p. 2, for 1858–59. The sources are not quite definite as to whether the "season" means the packing-season or a twelve-month year.

[51] *New York Shipping and Commercial List,* March 5, 1853, p. 75, for 1851–52 season; Depew, *op. cit.,* II, 384, for 1852–53 season.

[52] *Cincinnati Gazette,* October 13, 1852, p. 2.

[53] *Internal Commerce. Provision Trade of the United States and the World's Provision Supply and Trade,* February, 1900, p. 2287.

ing in Illinois between 1853 and 1856, mostly centering in Chicago.[54] In 1850–51 Chicago stood thirteenth in size of packing output, with a pack of only 20,000 hogs. By the 1855–56 season it stood fourth, with a pack of 80,380 hogs. In the 1860–61 season it stood second, with a pack of 271,805 hogs. And in the 1861–62 season, it nearly doubled again, to secure first place, with a pack of 505,691 hogs.[55]

While the state of the markets was not the only important factor determining the number of hogs the western farmer would raise, it was the fundamental factor determining the number of hogs that would enter into commerce via the packers or the livestock markets of the country. There are three general periods in the marketing history of western provisions from 1830 to 1860. In the first period, 1830–42, the South, the West Indies, and export trade are the most important sources of demand. The beginning of the second period, 1842–52, is marked by the opening of the English market due to the lowering of the tariff; and closes, as the opening of the trans-Allegheny railroads marks the beginning of a new era. The third period, 1852–60, is marked by the dominance of the eastern market, though the foreign, the southern, and even the western market are still important factors.

The southern market is an enigma. Possessing more cattle and nearly as many swine per hundred population as any other section of the country, as revealed in the 1840 census figures (105.6 cattle and 217.5 swine, as against 95.5 cattle and 224 swine per 100 population in the northwestern states), yet the South remained up to the Civil War one of the best markets for western provisions.[56] Statistical evidence quite clearly shows that the South absorbed a considerable quantity of western pork and bacon. Taking the difference in figures between the amount of pork and bacon "imported into New Orleans from the interior"

[54] See maps of Paxson, *op. cit.*, for these years.

[55] *Internal Commerce. Provision Trade of the United States*, p. 2287. *Cincinnati Gazette*, February 20, 1852, p. 3; *Louisville Democrat*, February 28, 1857, p. 2.

[56] *Statistical View of the United States, Compendium of the Seventh Census*, pp. 170–71; *Census, 1840*, p. 475.

and the exports at New Orleans, we find that in the 1839–40 fiscal year (the first time both sets of figures are available) there were 114,140 barrels of pork and bacon and 8,505 barrels of beef left in New Orleans, presumably for sale in the South.[57]

The demand at the eastern seaports was said to have been chiefly for the United States navy, the merchant marine, and fishing fleet. This was estimated as a demand of about 100,000 barrels of pork annually in 1843.[58] It is not improbable that some of the eastern cities absorbed a little salted provisions, though their livestock markets supplied them with sufficient fresh provisions most of the year.

Finally, the foreign exports during the period from 1830 to 1842 varied from approximately 58,000 to 147,000 barrels of pork, and from 31,900 to 53,000 barrels of lard, which, pound for pound, was usually more valuable than pork.[59] In 1830 the West Indies absorbed 34,000 of the 57,000 barrels of pork and bacon, while British North America and England took practically all the rest.[60] Lard in that year was almost entirely absorbed by the West Indies.[61] These islands found lard to be their best substitute for butter, and so furnished a good market.[62]

During the whole period 1840–60, the census figures on population and livestock give a patent explanation as to why the West was finding a better market for its provisions:[63]

[57] Imports from *Report on the Internal Commerce of the United States, 1886–87*, pp. 201–2. These are subject to the 5–10 per cent possibility of error previously mentioned. Exports from *New Orleans Price Current*, October 10, 1840.

[58] *New York Shipping and Commercial List*, November 29, 1843, p. 379. From *Cincinnati Chronicle*, November 16, 1843. See also *Farmers' Cabinet*, Vol. X (February 16, 1845), citing *Cincinnati Chronicle; Cincinnati Gazette*, February 23, 1842, article from *Boston Atlas*.

[59] *U.S. Pat. Office Report, 1853*, p. 50. Lard figures are represented as barrels of 200 pounds, the same as pork, for sake of comparison. Pork figures up to 1840 were practically all under 100,000 barrels. Large imports into Canada in 1840–42 greatly increased totals. *Commerce and Navigation Report, 1841*, p. 210; *1842*, p. 12.

[60] *Commerce and Navigation Report, 1830*, pp. 198–237, 242–43.

[61] *Ibid., 1830*, pp. 198–237, 242–43.

[62] *New York Shipping and Commercial List*, February 14, 1855, p. 51. From *Cincinnati Price Current*.

[63] 1840 figures, *Compendium of the Seventh Census*, pp. 170–71; *Census, 1840*, p. 475; 1850–60 figures, *Census, 1860*, Introduction, pp. cxiii, cxviii, cxxii, cxxiv.

During the first half of the period, from 1841 to 1845, the amount of pork left at New Orleans remained about the same, with 107,000 to 128,000 barrels being the extremes. During the latter half of the period, the quantity left at New Orleans doubled and tripled till a high point of 348,000 barrels was reached in the 1850–51 fiscal year.[64] It is possible to make a rough estimate of just what proportion this was of the total hog pack of the West. With the number of hogs packed in the West fairly accurately known from 1843 on, with figures available as to the average weight of these hogs, and by use of recent data as to the relative

TABLE I

CATTLE, SHEEP, AND SWINE PER 100 POPULATION IN THE UNITED STATES BY REGIONS, 1840–60

REGION	CATTLE			SWINE			SHEEP		
	1840	1850	1860	1840	1850	1860	1840	1850	1860
New England..	62.5	52	48	33.6	13	10	173.0	82	56
Middle states..	70.1	52	45	81.3	41	31	145.0	58	53
Western states.	95.5	78	80	224.0	181	149	111.0	62	54
Southern states	105.6	107	113	217.5	215	175	60.6	140	88
United States	87.5	78	80	154.1	131	106	113.3	93	71

percentage of pork and bacon per hog, the amount of pork packed can be roughly estimated. In the 1844–45 season the 790,000 hogs packed would have made approximately 600,000 barrels of pork of 200 pounds each.[65] The amount of pork and bacon left at New Orleans during 1844–45 was 110,735 barrels, or approx-

[64] Imports, *Internal Commerce of the United States, 1886–87*, pp. 216–17. It should be noted that the possible inaccuracy changes from 5–10 per cent to 15–20 per cent with the 1848–49 season. Export figures, *Hunt's Merchants Magazine*, VII (October, 1843), 391; IX (December, 1843), 570; *De Bow's Review*, II (December, 1846), 422; VI (December, 1848), 437; VII (November, 1849), 421; *New Orleans Price Current, Annual Statement*, September 1, 1853.

[65] Depew, *op. cit.*, II, 384, on amount packed. Average net weight 225 pounds, *Philadelphia Commerce List and Price Current*, January 25, 1845. Ratio of net to gross weight taken as 83 per cent; of meat to gross weight, 56 per cent. Paul I. Aldrich (ed.), *The Packers' Encyclopedia* (Chicago, 1922), p. 69; David I. Davis and F. W. Wilder, *The Modern Packing House* (Chicago, 1921), pp. 295–96. Actual contemporary net vs. gross weights of hogs, and net vs. gross weight tables in *American Farmer*, N.S., III (February 2, 1842), 290, from *Kentucky Farmer;*

imately 18.5 per cent of the total pack.[66] Figures on destination of exports from New Orleans show that Charleston absorbed an additional 1.9 per cent, and that the "coastwise ports," which did not include Boston, New York, Philadelphia, or Baltimore, took 2.9 per cent.[67] It can be assumed with safety, then, that the South took somewhere between 15 per cent and 25 per cent of the pork packed in the West in that year. For the year 1850–51, using the same methods, 42 per cent of the pork and bacon packed in the West was left at New Orleans, and the "coastwise ports" took 13.9 per cent.[68] Even allowing for a larger percentage of error due to the uncertainty of New Orleans import figures, and to what seems to be a rather abnormally low average weight for hogs, it seems certain that the South absorbed from a third to over a half of the western pork and bacon of that year.

During the early forties there was a movement in the South to raise more hogs, due to the low price then being received for cotton.[69] Mississippi planters, particularly, were reported to have turned a large amount of attention to hog-raising between 1841 and 1844.[70] The increased imports of provisions into the South after 1845 can perhaps be attributed to better cotton prices, which cooled their enthusiasm for swine-raising.

The development of a new export market in England, resulting from the lowering of the English tariffs on meat products, was the outstanding event in the new period 1842–50.[71] The

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Louisville Democrat, November 6, 1858, p. 4. The possible error would be about 10 per cent for this year; though in later years, when the average weight of the swine was more accurately determined, the error can be cut down to 5 per cent.

[66] The New Orleans fiscal year was from September 1 to August 30.

[67] *De Bow's Review*, II (December, 1846), 422.

[68] Based on a pack of 1,333,000 hogs; Depew, *op. cit.*, II, 384. Average net weight of hogs 185 pounds, *Western Journal*, VI (June, 1851), 192.

[69] *Southern Planter*, I (September, 1841), 195; *Southern Agriculturist*, N.S., I (February, 1841), 77–78; *ibid.*, II (October, 1842), 527; *Southern Cultivator*, III (August, 1845), 127.

[70] *American Farmer*, N.S., III (July 22, 1841), 65; *The Agriculturist*, III (October, 1842), 235; *Southern Cultivator*, II (May 1, 1844), 70.

[71] *New York Shipping and Commercial List*, March 4, 1843, p. 71, from *Cincinnati Gazette*, February 22, 1843; a new reduction occurred in 1846, see *American Farmer*, 4th Ser., I (March, 1846), 273.

Canadian market had acted as a curtain-raiser to this expansion by increasing its demands from 38,000 barrels of pork alone in 1840 to 84,000 barrels in 1841 and 118,000 barrels in 1842.[72] The expansion of the exports is seen in the following figures on pork and bacon, given in thousands of barrels:[73]

Fiscal Year	Amount	Fiscal Year	Amount
1839–40	74	1845–46	205
1841–42	180	1848–49	533
1843–44	162	1850–51	255

In the seasons 1844–45 and 1850–51 this would represent 29.4 per cent and 30.7 per cent, respectively, of the total amount of pork packed in the West. Though the effect of this market on the price of pork, as seen by the graph of pork prices, 1830–60, was only sporadic, due to the ease with which the hog supply could be increased in the West, yet the total amount received by the farmer and packer became greater. The high peak in this export demand, 1846–49, was brought by the Irish famine of 1846 and 1847. This in turn caused a rapid expansion of the packing industry.

The opening-up of the English market was the main factor in bringing about the establishment of a beef-packing industry in the West, small, perhaps, as compared to pork-packing, but not totally to be ignored. A newspaper item of November 1843 stated:

> Beef packing for the English market is becoming a prominent feature at some of the lake ports, and the aggregate arriving here is fast augmenting. At Cleveland, during the past two weeks, some 2000 head of Cattle have been slaughtered, principally for the European market; . . . . . At Chicago the business is also increasing in importance annually; there are annually several large establishments in operation at that place, and the attention of capitalists familiar with the English trade, is directed to other points where the cattle may be purchased low.[74]

[72] *Commerce and Navigation Report, 1840*, p. 219; *1841*, p. 210; *1842*, p. 12.

[73] *U.S. Patent Office Report, 1853*, p. 50.

[74] *New York Shipping and Commercial List*, November 8, 1843, p. 355, article from *Buffalo Commercial Advertiser*.

Chicago had become the principal beef-packing point, having killed some 20,000 beef cattle in the fall of 1849 for this purpose.[75]

The East was undoubtedly furnishing a larger market for provision supplies in this period, as is seen in the great falling-off in livestock per capita from 1840 to 1850. However, unlike southern receipts and foreign exports, there is no accurate way of measuring the provisions absorbed by these states.

The gold rush to California, 1849, and following years, brought a temporarily large demand for exports to that point. In 1850 there were said to have been imported into California 46,756 barrels of pork from the United States.[76] The gold rush, however, was of more importance in bringing about high prices for cattle than in the pork trade.[77]

New York City secured its first direct railroad connections with Buffalo in 1851. The Pennsylvania Railroad from Philadelphia to Pittsburgh was finished December, 1852, and secured connections to Indianapolis during 1853. The Baltimore and Ohio Railroad first reached Wheeling on the Ohio River in 1853.[78] By the end of 1853 Chicago had connections with the East.[79] The years 1851–53 are therefore of rather vital importance in the economic life of the West.

It is only indirectly, however, that we can tell to what extent these new means of communication and the increasing population in the East created new markets for western provisions. While there are some statistics on provisions going east, they are not complete; and the problem is still further complicated by the fact that much of the trade was obviously intended for export. As will be shown later, statistics do show that exports were

[75] *Cincinnati Gazette*, November 24, 1849, p. 2.

[76] *Baltimore American*, February 14, 1851; *ibid.*, December 22, 1849, p. 3.

[77] See *Annual Report of the Cincinnati Chamber of Commerce, 1851–52*, p. 4; *ibid., 1852–53*, p. 4.

[78] B. H. Meyer, *History of Transportation in the United States before 1860* (Washington, 1917), pp. 364, 366, 371, 396, 410.

[79] Paxson, *Early Railroads of the Old Northwest*, p. 258.

maintained at about the same erratic levels of the previous decade; while southern markets from 1851 to 1857 show a positive decrease, though from then on there is a rather rapid jump. Despite this, the hog pack, which was 1,562,580 hogs in 1851–52, advanced to 2,201,000 the next year and to 2,535,000 in 1853–54, and remained over 2,000,000 every year but one till 1860; while pork prices maintained a fairly steady upward swing during the whole decade.[80] This all points to the fact that the East, with some help from the West, was mainly responsible for the expansion. As has been pointed out, eastern livestock markets were also taking an immense number of live hogs and cattle during this decade.

Between 1852 and 1857 the quantity of pork and bacon left at New Orleans varied from a high point of 276,000 barrels in 1852–53 to 161,000 barrels in 1856–57. From then on to 1860, for some not altogether explainable reason, it jumped to over 300,000 barrels, the figures standing at 382,000 barrels in the 1859–60 season.[81] The 1859–60 figures stand 34,000 barrels above the 1850–51 high point. Though these New Orleans figures are subject to a 15–20 per cent error, their relation to each other is probably fairly accurate. The completion of the Louisville-Nashville railroad in 1854 also furnished another avenue for provisions to enter the South, though there are no statistics on this point.[82] Figures on imports into Mobile available for the period 1854–60 show imports of bacon and pork varying from 70,448 barrels in 1855–56 to 114,588 barrels in 1859–60.[83] Merely taking the figures for Mobile and New Orleans for 1859–60, we find these two ports took 29 per cent of the pack of the West, figuring by the methods previously used.[84] With the price of pork

[80] See graph of pork prices and packing figures, and sources for.

[81] Imports, *Internal Commerce of the United States, 1886–87*, pp. 217–18. Exports, 1851–59 from *Annual Statements, New Orleans Price Current*, September 1 of each year; 1859–60 from *De Bow's Review*, XXIX (December, 1860), 784.

[82] Myers, *op. cit.*, p. 471.

[83] *De Bow's Review*, XXIX (November, 1860), 665.

[84] Western packing (1859–60), 2,350,822 hogs. Average weight of hogs in Ohio, 191⅔ pounds; Indiana, 192½ pounds; Illinois, 191 pounds; Kentucky, 197

going up, there was a renewed movement in the South during the fifties toward independence of western provisions; but the evidence above seems to show that the movement was not successful.[85]

Foreign exports of pork and bacon had a rather erratic course during this period. Starting with 112,000 barrels in 1851–52, they rose to 470,000 barrels in 1853–54, near which mark they maintained themselves for three years, and then fell to 266,000 barrels by 1858–59 when they again started to rise.[86] The Crimean War was mainly responsible for the great demand from both England and France from the early part of 1854 on; this brought large profits to the packers.[87]

Finally, the local western market must have been expanding quite rapidly in this period. Cincinnati had a population of 115,436 persons in 1850 and 161,044 in 1860. St. Louis had 77,860 persons in 1850 and 160,773 in 1860; while Chicago exhibited a growth from 29,963 to 109,260 during the same time.[88] The immense amount of railroad building in the West during this decade required a large labor force, which consumed an appreciable quantity of provisions.[89]

The growth of markets will account for the great expansion of the packing industry during these three decades. It will not indicate with any accuracy, even in connection with the pork prices, the profitableness of the industry to those engaged in it.

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pounds; Missouri, 194⅓ pounds; Iowa, 192 pounds; Tennessee, 189 pounds; Wisconsin, 207 pounds. *New York Shipping and Commercial List,* March 3, 1860, p. 71. Armour's total in Depew, *op. cit.,* II, 384, is 2,351,000 hogs.

[85] *Farm and Planter,* VI (January, 1855), 10; *Southern Cultivator,* XIV (July, 1856), 209–10; *ibid.* (September, 1856), 291; *ibid.,* XIV (December, 1856), 365.

[86] *Commerce and Navigation Reports,* 1851–60.

[87] *Annual Reports of the Boston Board of Trade,* 2d annual report, 1856, p. 65; *Chicago Democratic Press,* February 5, 1855, p. 2; *Baltimore American,* November 22, 1856, p. 1.

[88] Fred. J. Guetter, and Albert E. McKinley, *Statistical Tables Relating to the Economic Growth of the United States* (Philadelphia, 1924), p. 7.

[89] See *Cincinnati Gazette,* November 26, 1851, p. 3; *Annual Report of the Cincinnati Chamber of Commerce, 1850–51,* p. 2.

Indeed, a year-by-year study of the business makes one wonder whether, in the long run, profits exceeded the losses; for one or two years, at the most, of medium-to-heavy profits would be almost always followed by a year or so of medium-to-heavy losses. Each year was more or less nearly unique because of the uncertain weather factor which determined the size of the corn crop, and thereby in part the number of hogs that would be brought to the packing centers. However, an adequate discussion of the yearly business from 1830 to 1860 would require more space than has been alloted to this study.

CHARLES T. LEAVITT

IN THIS ISSUE

E. A. Duddy, author of "Grain Elevator Storage at the Interior Terminal Markets: Chicago," is associate professor of marketing in the School of Commerce and Administration at the University of Chicago. Two books by Professor Duddy in the marketing field have recently been published: *Agriculture in the Chicago Region,* and *The Cold Storage Industry in the United States.*

"The Marketing of Furniture," by C. E. Dankert, instructor in economics at Dartmouth College, is the first of two articles on this topic. Mr. Dankert's second article will appear in a forthcoming issue of the *Journal of Business.*

The joint authors of "Some Effects on Wheat Marketing of Changes in Production and Harvesting Methods in the Southwest," are on the faculty of Kansas State Agricultural College, R. M. Green as professor of agricultural economics, and H. J. Henney as assistant professor of agricultural economics. They are also on the marketing staff of the Agricultural Experiment Station at Manhattan, Kansas.

Don M. Dailey, of the Bureau of Business Research of the University of Illinois, and author of "National Banks in the Savings Deposits Field," is known to readers of the *Journal* through his article on "Illinois Banks and the Federal Reserve System," and book reviews.

Charles T. Leavitt, who writes on "Some Economic Aspects of the Western Meat-Packing Industry, 1830–60," is a graduate student in the department of history at the University of Chicago.

NOTES

CURRENT BUSINESS SITUATION IS DISCUSSED AT SEVENTH CONFERENCE OF MAJOR INDUSTRIES

THE seventh Conference of Major Industries, held annually under the auspices of the University of Chicago and the Institute of American Meat Packers, with the co-operation of the Chicago Association of Commerce, the Commercial Club of Chicago, and the Industrial Club of Chicago, took place at Mandel Hall at the University on October 22.

President Robert Maynard Hutchins of the University presided at the morning session and welcomed the speakers and visitors. All discussions were based upon the current situation in the major industries represented. In the morning, R. C. Holmes, president of the Texas Company, spoke on "Petroleum"; W. B. Storey, president of the Atchison, Topeka & Santa Fe Railway, on "Railroads—Ten Years After"; Harvey S. Firestone, Jr., vice-president of the Firestone Tire and Rubber Company, on "Rubber"; and Matthew S. Sloan, president of the New York Edison Company, on "Electricity."

The afternoon session opened with Oscar G. Mayer, chairman of the Committee on Educational Plans of the Institute of American Meat Packers, in the chair. Speakers and their topics were: Robert E. Wood, president of Sears, Roebuck and Company, "Merchandising"; George M. Verity, chairman of the board of the American Rolling Mill Company, "Steel"; L. J. Taber, master of the National Grange, "Agriculture"; and M. H. Aylesworth, president of the National Broadcasting Company, "Communication."

Those attending the Conference and leading educators were guests at the dinner, where the chief speaker was President Glenn Frank, of the University of Wisconsin. Mr. Frank spoke on the challenge to industrial leadership growing out of the current situation, and the need for development of increased consumption to meet world-wide overproduction in many lines.

BOOK REVIEWS

The Labor Banking Movement in the United States. Princeton: Princeton University Press, 1929.

This study of labor banking by the Industrial Relations Section in the Department of Economics and Social Institutions of Princeton University was begun in 1925 and concluded late in 1929.

The term "labor bank" is used to refer only to "those institutions in which a majority of stock is owned by trade unions or trade union members." Altogether thirty-nine such banks have been established, of which number twenty-two remain in operation. The study traces the movement from its inception in suggestions made in labor conventions as early as 1904 through the chartering of the first banks in 1920; the peak development in 1925, when there were thirty-six banks in operation; into the period of terminations beginning in 1926 and up to the fall of 1929.

No precedent for this distinctive American development is found in European practice, and American labor banks are clearly distinguished from the German people's banks and the English Co-operative Society's institutions. The first banks appeared in 1920 as a result of the prosperous condition of many trade-union treasuries and in opposition to the widespread open-shop movement of that year. Their proposed functions were five in number, as follows: (1) To advise trade-union leaders in business and investment matters; (2) to protect organized labor's interests by extending financial assistance to friendly employers; (3) to take the aggressive in securing labor representation in the master financial organizations of Wall Street; (4) to introduce co-operative features into American banking, making small loans at reasonable rates and paying dividends upon savings deposits; (5) to develop and maintain the pride of various crafts in their organizations.

The banks exhibit several unique features. Twenty-two of the total number have been under the control of national unions, most of them banks of the Brotherhood of Locomotive Engineers and the Amalgamated Clothing Workers. Approximately a third of the banks have been controlled by state, county, city, or local organized groups. Several have been owned by trade-union members individually. Eighteen

of the thirty-nine have had charter provisions limiting the number of shares of stock held by individuals.

The success of labor banks from both the banking and labor standpoints is evaluated and the authors present a critical examination of the causes for terminations. They find that the objectives set for the banks were only partially attained. Few of the labor bankers were capable of giving expert financial and investment advice. The banks were able to extend financial assistance to the friend of labor in very few cases. The "window in Wall Street" was attained at excessive cost. Few of the banks even attempted co-operative features and only three paid any dividends upon savings deposits. Craft pride was likely at least as greatly injured by failures as it was advanced by the establishment of the institutions.

Major causes of terminations include poor selection of personnel; trade-union political interference; location and unsatisfactory or extravagant equipment; the costliness of numerous small deposits; excessive promotional commissions; long banking hours; careless handling of small loans (responsible for the failure of at least two institutions); numerous poor investments; too early dividend payment; general mismanagement attributable to ignorance, favoritism, and dishonesty; and lack of support by trades unionists. Less than 50 per cent of the depositors of all the banks were trade-union members.

The study is comprehensive, critical, and without apparent prejudice. Its authors merit commendation for their careful organization of materials, and the thoroughness and fairness with which analysis and conclusions are presented. The study represents a distinct contribution to the literatures both of labor economics and of banking.

DALE YODER

UNIVERSITY OF IOWA

Unemployment Insurance in Germany. By MOLLIE RAY CARROLL. Washington, D.C.: Brookings Institution, 1930. Pp. 111. $2.50.

Germany has tried almost every known method of coping with unemployment. When the Treaty of Versailles released six million soldiers to civil life, reduced German territory nearly one-seventh, and closed up Germany's war industries, Germany, like most of the other

nations of Europe, faced an acute problem. Unless relief was provided, the distress of the unemployed endangered the state.

Local efforts to cope with the situation proved of little avail. The local unemployment insurance funds and local poor-relief agencies quickly exhausted their reserves, just as happened in Belgium, Denmark, and other countries. Relief measures relied upon in 1918 and 1919 were replaced in 1920 by an unemployment insurance plan under which the employers and workers each contributed one-third, and the national and local governments each one-sixth to a national fund. Since 1923 the entire cost has been borne (theoretically) by the employers and employees. But the government has had to subsidize the funds frequently because of recurrent depression unemployment.

The National Insurance Law of 1927, which was expected to overcome many of the difficulties and deficiencies of the earlier acts, is discussed in detail in Part II of Miss Carroll's book. Under this law equal compulsory contributions, not to exceed 3 per cent of the wage, are exacted from the employer and the employee. Collections are made through the same agencies that collect contributions for health insurance and benefits are paid out at the labor exchanges. A large enough reserve is held in the national office to care for 600,000 unemployed for three months. Membership is compulsory for most wage and salaried persons earning less than 6,000 marks a year.

A recipient of unemployment insurance must have worked twenty-six weeks during the preceding year in an insured occupation and must be able and willing to work. Rates of benefits are based on the average remuneration received the previous three months of employment. The workers are divided into eleven wage classes, benefits being graded from 75 per cent of wages in the lowest group to 35 per cent in the highest. Supplementary allowances are given for dependent members of the family.

The administration is in the hands of an autonomous body called the Reischsanstalt. Co-operative relations have had to be worked out between unemployment insurance, other forms of social insurance, and local poor relief. All of these are integral parts of the German plan for giving the workers security against their economic risks.

Miss Carroll's book is a valuable contribution to the literature on unemployment insurance and the best treatment of the subject in the English language.

D. D. LESCOHIER

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Secular Movements in Production and Prices. By SIMON S. KUZNETS. Boston: Houghton Mifflin Company, 1930. Pp. 536. $6.00.

This admirable investigation of the nature of the long-term movements in production and prices as well as of their influence on cyclical variations used some twenty different industries as a basis for its research; furthermore, more than half of these industries were analyzed in different countries in order to ascertain whether or not conclusions that might be drawn from the secular trend of any given industry in one country are valid for this industry in other countries also.

The analysis was carried through as far back as reliable statistical material was available; the earliest data were on the output of coal (1810) and of wheat crops and wheat prices (1815) in France.

The curve-fitting method of describing secular movements was used to ascertain whether or not the long-time development in different branches of economic activity followed similar courses in the past; the most essential hypothetical characteristics of these developments were derived from a general survey that suggested the tendency of industries to grow at a declining rate. Of the curves that express this decline in the rate of percentage increase, the simple logistic and simple Gompertz curves were found most suitable.

The findings of his study are summarized by Kuznets as follows:

1. Technical progress slackens.

2. The slower-growing industries exercise a retarding influence upon the faster-growing complementary branches. The rapidly growing industries exercise a similar influence upon competitive branches.

3. The funds available for the expansion of an industry decrease in *relative* size as the industry grows.

4. An industry in one country may be retarded by the competition of the same industry in a younger country.

Kuznets' conclusions ought to prove of greatest value to several groups of people:

First there are the statisticians that indulge in forecasting long-term economic trends, be it for the purpose of long-term budgeting as advocated by the "National Electric Light Association" *(Publication No. 060)* or for the purpose of forecasting corporate profits as attempted by Standard Statistics Companies in their studies on *The Next Five Years in American Business Profits.* Kuznets' thesis of the declining rate of growth of production and of profits of all industries is bound to deal a severe blow to the so-called "common stock as long-term investment" theory. This assumption that the purchase of so-

called "sound" common stock represents a profitable investment, even if the securities are bought without regard for the price paid for and possible later declines, if only held for the strictly long pull—this theory that lies back of the famous investment policy of the Sun Life Insurance Company of Canada and of all fixed investment trusts, appears to stand on rather weak feet in the light of Kuznets' findings.

The validity of this "common-stock theory" is undermined further by two other secular trends: the downward trend of prices and the as yet hardly recognized consequences of the international strike of women against bearing enough children to allow for a further growth in population in the so-called civilized nations.

For the advance of economic theory Kuznets' work provides most valuable material for the study of business cycles and of the growth of trusts or other endeavors of concerted action to escape the evil consequences of the ever increasing rate of fixed costs. Most of all, however, a cornerstone has been laid for "the dynamic theory of economics arising from the long vision of a statistician and the penetration of a theoretical analyst, framing a complete account of economic reality as it presents itself to our eye. It will give us a complete account of why and how economic phenomena are as they are, and what brought them to the form in which we conceive them. We shall know not only the current state of economic reality, but the more or less stable sequences and interrelations which underlie its change."

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The Money Value of a Man. By LOUIS I. DUBLIN and ALFRED J. LOTKA. New York: Ronald Press, 1930. Pp. xv+264. $5.00.

Any attempt to evaluate the money value of a man is, of course, very complicated and is necessarily subject to a large margin of indeterminateness. The problem of valuation, as the introduction of the book points out, is not one but many problems. Hence, in order to keep the discussion within the practical limits set by tangible qualities capable of numerical estimation, the inquiry has been limited to the value of a man to his dependents or those who have a definite financial interest in him as a breadwinner. Sentimental and human interest values are purposely ignored. The authors do not attempt to arrive at an economic valuation from a social standpoint.

The first eighteen years of life are a period during which all the "entries are on the cost side." The discussion centers around such items as: cost of being born, food, clothing and shelter, education, health, recreation, insurance, and sundries. It is estimated that the total cost of raising a child to age eighteen is $7,400. This varies widely, however, according to the social status of the parents. Correction in terms of the "spoilage," due to premature death and the interest charge on "inert capital" brings the total to $10,485. Lack of a method of estimating the value of the mother's contribution has led to the omission of this item. A final revision which allows for the money earned by boys from about fifteen on brings the cost to about $9,180. These figures do not appear in the estimates of the economic value of a man to his dependents, inasmuch as they represent costs rather than income.

Since value is a function of earnings the discussion has been facilitated by picking certain type groups of wage earners based upon maximum yearly wage or salary attained. These groups cover the $2,500 maximum yearly wage groups, $2,500 to $5,000 maximum, $5,000 to $10,000 maximum, the superstandard group (over $10,000 annually), and the substandard group (under $2,500 annually). By consulting the tables given it is possible to discover with some degree of accuracy in which of these earnings groups a man belongs. Since at early ages earnings are little or no indication of ultimate prospects, in the case of a young man classification will have to be made on the basis of such facts as special training, or other signs of a favorable future. This method has also to be used to some extent in evaluating the position of older men.

There are two fundamental considerations behind the method involved in estimating the money value of a man: (1) That each year out of every 100,000 males reaching age eighteen a certain number will survive, and that these survivors will each year earn certain sums of money as wages or salaries; and (2) that a certain part of this money must inevitably be spent on the upkeep of the person himself and, hence, cannot be included as part of his value to his dependents.

After placing the individual in his proper earnings group, the method followed in figuring economic worth is to check up on life-expectancy, the annual earnings per head for survivors, and the per cent of survivors normally employed. From these data can be deduced gross future earnings of the individual discounted at 3½ to 4 per cent as judgment dictates. In order to get net future earnings one has only to subtract the discounted cost of living.

Disease and physical handicaps are discussed in some detail as factors affecting economic worth. Methods of computing the degree of loss as well as the relative importance of various debilitating factors are gone into with some degree of thoroughness. Here, however, the discussion turns quite as much on the social as well as the individual loss.

The chapter on public health shows the relation of the foregoing discussion to the administration of public-health programs. It is clearly designed as ammunition for public-health propagandists and as such is social rather than individualistic in character.

The final chapter on life insurance shows the purpose around which the whole study revolves. It discusses the insurance question in a reasoned and well-considered manner, showing both positively and by implication that the insurance a man should carry has certain very definite upper and lower limits—and that these limits must be determined as much in the light of the commonsense requirements of everyday living as by the arbitrary standards set up in the tables.

There is no denying the propagandistic nature of the book in question but there should be no odium attached to the classification in this case. The text is replete with tables showing an amazing array of data which have been compiled with great care. The resources of the Metropolitan Life Insurance Company have contributed to making this study one which few other agencies in the world have the facilities to undertake. The approach is scholarly and shows thorough mastery in the manipulation and presentation of data. Great praise is due to the Metropolitan for making a study of this sort available not only to students but for consultation by any man who wants to approach his savings and insurance problems intelligently.

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The Modern Worker. By Mildred J. Wiese and Ruth Reticker. New York: Macmillan Co., 1930. Pp. xviii+610. $2.40.

Practically all labor texts devote their time to exploiting the so-called grievances of labor. The authors consciously or unconsciously are giving voice to the Marxian conception of economic relationships which assumes that the operation of competitive forces tends inevitably to work to the discomfiture of the laborer. Competition prevents the well-meaning employer from dealing fairly with his workers, since he must

compete with others who are less socially minded. The working class, consequently, can expect nothing from profit-seeking management and must come to occupy a weaker economic position unless trade-union or legislative barriers are established for its protection.

The Modern Worker by Wiese and Reticker has one outstanding characteristic. It has attempted and in large measure succeeded in getting away from the grievance approach to labor problems. There is an intelligent and wholesome attempt to state the problems and to compare the workers' present situation with labor conditions in the pre-capitalistic era without allowing a warped bias in favor of that golden era to obscure all sense of veracity.

One aspect of the book is disappointing, however, for although the authors have gone far toward developing a positive and factual statement of labor conditions, they have followed the usual textbook procedure of stating them in negative rather than positive terms, i.e., they discuss unemployment rather than employment, accidents rather than safety, fatigue, old age, disease, and monotony rather than health and vigor. The statement of labor problems in positive terms becomes a challenge to improvement whereas the typical negative statement induces a pathological interpretation.

The book shows, by implication if not by positive statement, the inadequacy of trade unionism and government action in coping with labor conditions and clearly points out the importance of the business manager as the pivotal force in this field. The humanitarian viewpoint predominates the discussion, however, for they say, "the product of the business is not just steel rails, etc., but also men—men who are better workers, better citizens, and happier individuals." Whether any such objective would be capable of motivating the mass of business men over a period of time is subject to question. It is, however, a demonstrable fact that careful selection, training, and motivation of workers is sound business policy and needs no further embellishments to recommend it as good practice.

The organization of the book is logical and tends to follow the customary outline for such books. The historical introduction is a trifle overdone and its treatment is too detailed for its relative importance in the general set-up in the book. The six main parts into which the book is divided are in turn subdivided into chapters. Each chapter is preceded by a list of objectives and followed by a somewhat profuse group of questions intended for the student's guidance.

One leaves the book with the grateful feeling that an intelligent at-

tempt has been made to write a labor text that emphasizes objective data rather than the traditional biases and prejudices. That the book has shortcomings in this respect is not surprising, but the fact that it has made a distinctive departure in this direction makes it worthy of special attention in the field of labor literature.

The book is written for high-school or junior college use. Teachers developing courses at this level should by all means survey this book and find a place for it either as a text or in their list of supplementary readings.

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Economic Rhythm: A Theory of Business Cycles. By ERNST WAGEMANN, Director of the German Institute for Business Cycle Research. Translated from the German by D. H. BLELLOCH, International Labour Office. New York: McGraw-Hill, 1930. Pp. xvi+287. $3.00.

By "economic rhythm," Wagemann means the periodical fluctuations which occur in economic life. This is not essentially an analysis of seasonal fluctuations which occur in a fixed rhythm, that is, recur at an unchanging yearly interval of time. The study treats rather of business cycles which occur in a free rhythm, that is, recur at an uncertain interval of time, somewhat longer than the yearly intervals.

In the short ten pages devoted to seasonal fluctuations, however, Wagemann considers how modifications in seasonal fluctuations and "sliding" seasonal fluctuations (shifting back and forth between months) come about. The emphasis here upon an investigation of the causes of these changes rather than a mere arithmetical representation is typical of Wagemann's point of view throughout the study.

Wagemann's list of movement forms in economic life differs from the four put forward by American statisticians: long-time trend, seasonal fluctuations, cyclical fluctuations, and miscellaneous random fluctuations. Rather, he first breaks movement forms into two groups, periodical fluctuations and changes in structure. Periodical fluctuations comprise the seasonal and cyclical movements. Changes in structure of economic life may be divided into long-time trends (which are continuous changes) and discontinuous changes, which involve a

breach in the course of development. This classification is noteworthy because it does not involve a "catch-all" class.

The free-rhythm movements (business cycles) are not adequately marked out when negatively defined, viz., the business cycle is the movement form remaining after elimination of the long-time trend and seasonal fluctuation. Instead our conception should be positive. Wagemann defines the business cycle as a self-generating reaction from a disturbance one side or the other of a "state of equilibrium." The business cycle is the total complex of economic reaction phenomena. This illustrates Wagemann's method. One must not tie the concept down to known methods of measurement.

Wagemann believes that the one classification of phases of the business cycle—depression, recovery, prosperity, and recession—is inadequate for the study of business cycles if taken singly. He would supplement this classification of position with a complimentary classification of tensions, viz., (1) negative tensions (slackness), (2) relaxation of negative tensions, (3) positive tensions, (4) relaxation of positive tensions (liquidation).

In studying business cycles one must find relationships which exist between the material data. These relationships will be one of four forms: (1) parallel fluctuation (fluctuation in the same direction and to the same degree); (2) "radiatory" fluctuation (fluctuation in the same direction, but to an unequal degree); (3) sequence or lag; (4) countervariation (scissors movement). This fourth form may be illustrated by imports, exports, storage, and consumption. Increasing imports and decreasing exports mean an increased storage if the goods are not immediately consumed. This form of relationship bids fair to become a significant method of studying basic data.

In forecasting Wagemann rejects the sole use of a single formula for he conceives of economic life not as a mechanism, but as an organism with all parts interconnected in an intimate functional union. This means no one barometer is adequate. He therefore has set up a series of barometers relating to each of the following: (1) production; (2) employment; (3) storage movements; (4) foreign trade; (5) business transactions; (6) credit; (7) security, commodity and stock markets; (8) commodity prices.

Wagemann's method of forecasting also involves the classification of industries according to whether they are predominantly dependent upon such factors as raw materials, foreign sales, producers' goods.

The method of forecasting rests basicly on the idea of typical rela-

tionship forms. This means a classification of any given situation in one of the relationship forms which have recurred in the alternation of the phases (or tensions).

The business-cycle reactions are forecasted on the basis of these type forms found in the barometric set-up or industry-classification relationships. In making such diagnoses, there are two possibilities: (1) each relationship may be considered purely as a symptom, or (2) on the basis of the symptomatic relationship, a tentative functional theory may be set up to provide a logical and reasonable basis for conclusions.

Although Wagemann's book is theoretical, is "an effort to comprehend the subject in general terms," it is by no means an attempt to present the primary cause of the business cycle. The causes can be sought in various strata of economic structure, or outside. Such primary causation scarcely constitutes proper subject matter for the science. However, Wagemann presents a short classification of theories of the primary cause.

The author considers three possibilities of the state stabilizing business: organized planning of industry, application of credit policy, and unemployment insurance.

Illustrative of German conditions is the emphasis placed upon foreign trade and the prosperity of the building trade in depression.

It seems unnecessary to consider Wagemann's iconoclastic point of view regarding the relation between prices and production and his empirical adherence to the cost-of-production theory of value (chap. xix).

It is interesting that the predicted change in the numbers employed in the German Reich is negative for the years 1932–34, but positive for all other years to 1940 (p. 269).

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